TRAJECTORIES OF LEARNING: THE USE OF MULTIMODAL RESOURCES TO ENHANCE ACADEMIC WRITING DEVELOPMENT IN OPEN AND DISTANCE e-LEARNING.

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ABSTRACT

Students' transition from school to university is as much multifaceted as it is complex. Such complexity is particularly evident among first-year students entering Higher Education. One should be especially cognisant of such complexities when considering variables such as learner characteristics in relation to their approach to distance learning, as well as their writing skills and digital literacies development. Student support frameworks should be put in place to complement subject-related content. Currently, strategies to support students with their academic writing abilities are limited, and findings are often inconclusive.

In 2015, a study was conducted at an Open Distance e-Learning (ODeL) Writing Centre to explore both theoretical and practical issues related to an Information and Communication Technologies (ICT)-driven writing intervention to first-year students studying through distance learning. A digital writing portal, through the curation of OERs, was designed and used to find ways to steer follow-up interventions. The study focused primarily on learner experiences, and the use of OERs to support practice-based activities within the skill-set of academic writing ability at university level.

This qualitative study focused on learner experiences and the usability and pitfalls of Information and Communication Technologies in complementing writing intervention during practice-based activities within the skill-set of academic writing at university level. Mainly positive responses were received in instances where the theory of multimodality and Connectivism followed.

Findings suggest that cognitive-linguistic activity is often not evident within the framework of both higher and distance education, especially where academic writing skills development is needed in context to scaffold actual content cognitively within the curricula itself.

With a strong focus on Multimodality and Connectivism, this study showed that learners were able to work with reference points and to conceptualise images and

texts related to the content which allowed them to practice writing conventions better.

Finally, by applying theories of first-language transfer (Gass, 1988; Ellis, 2000), the students' ability to digest newly introduced materials as well as their ability to understand and follow instructions were also key themes which emerged as workable opportunities to model their understanding of writing practices favourably.

OPSOMMING

Die oorgang van skool na universiteit het vele fasette en is ook kompleks. Hierdie kompleksiteit is veral waarneembaar onder studente tydens hul eerste jaar van Hoër Onderwys. Daar moet 'n bewustheid wees van hierdie kompleksiteite wanneer veranderlikes soos leerder eienskappe met betrekking tot hulle benadering tot afstandsonderrig, asook skryfvaardighede en digitale geletterdheid ontwikkeling in ag geneem word. Ondersteuningsraamwerke vir studente behoort in plek gestel te word om vakgeoriënteerde inhoud aan te vul. Tans is strategieë om studente se akademiese skryfvaardighede te ondersteun beperk en bevindinge lewer dikwels nie duidelike antwoorde nie.

In 2015, is daar 'n studie aan 'n Afstandsonderrig Skryfsentrum (AS) gedoen om die teoretiese en praktiese kwessies rondom Informasie- en Kommunikasietegnologie (IKT) in intervensies in die skryfvaardighede van eerstejaarstudente te ondersoek. Ope-onderrig Hulpbronne (Open Education Resources) en 'n digitale skryfportaal is ontwerp en gebruik om maniere te vind om opvolg-intervensies te bestuur. Hierdie studie het gefokus op die leerderervaring asook die gebruik van IKT om ondersteuning aan praktykgerigte aktiwiteite in akademiese skryfvaardigheid op universiteitsvlak te lewer.

Hierdie kwalitatiewe studie het gefokus op die leerderervaring en die bruikbaarheid sowel as die probleme van IKT intervensie wanneer ondersteuning vir praktykgerigte aktiwiteite binne akademiese skryfvaardighede gelewer word.

Waar die teorieë van multimodaliteit en konnektivisme toegepas was, was hoofsaaklik positiewe terugvoer gelewer. Bevindinge suggereer dat kognitief-linguistiese aktiwiteit dikwels nie duidelik binne die raamwerk van beide hoër- en afstandsonderrig geintegreer is nie. Dit is belangrik dat die ontwikkeling van akademiese skryfvaardighede binne konteks benodig word om ware inhoud, kognitief binne die kurrikula, stapsgewys (deur ‘n *scaffolding* metodologie) te ondersteun.

Deur die toepassing van multimodaliteit en konnektivisme het hierdie studie bewys dat leerders in staat was om met verwysingspunte te werk en om beelde en tekste binne die inhoud te konseptualiseer, wat hulle in staat gestel het om akademiese skryfkonvensies meer suksesvol te herhaal.

Finally, by applying theories of first-language transfer (Gass, 1988; Ellis, 2000), the students’ ability to digest newly introduced materials as well as their ability to understand and follow instructions were also key themes which emerged as workable opportunities to model their understanding of writing practices favourably.

Ten laaste, deur die toepassing van teorieë wat verband hou met moedertaal-oordrag (Gass, 1988; Ellis, 2000) het belangrike temas vorendag gebring wat ‘n grondslag skep vir die gunstige modellering van leerderbegrip oor skryfvaardighede. Hierdie temas sluit in die student se vermoë om nuwe material te verwerk, sowel as hul vermoë om instruksies te verstaan en te volg.

DEDICATION

To my sister
JACKIE ANNENISE IZAKS

DECLARATION

I, the undersigned, hereby declare that **TRAJECTORIES OF LEARNING: THE USE OF MULTIMODAL RESOURCES TO ENHANCE ACADEMIC WRITING DEVELOPMENT IN OPEN AND DISTANCE e-LEARNING** is my original work and that I have not previously in its entirety or in part submitted it at any university for a degree. Where appropriate, the resources I have used and quoted have been properly acknowledged and referenced.

Signed

Jacques Avril du Toit

Date: March 2020

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KEY WORDS

Computer-Assisted Language Learning

Connectivism

English for Academic Purposes

Multimodality

Open Distance e-Learning

Open Educational Resources

Writing Centre

Writing development

CHAPTER 1: INTRODUCTION

"Technology is not a panacea or a magic bullet that suddenly transforms all learning. The effectiveness of educational technology depends on how it is employed to meet educational goals for particular kinds of students in specific language learning environments…." (Oxford et al., 1998 p. 13)

1.1 INTRODUCTION

Students' transition from school to university is as much multifaceted as it is complex. Such complexity is particularly evident among first-year students entering Higher Education. One should be especially cognisant of such complexities when considering variables such as learner differences (e.g. the demography of learners, their first language, access to academic writing opportunities, access to digital technologies and students' perception of higher education demands) and putting in place student support frameworks to complement subject-related content. Currently, strategies to support students with their academic writing abilities are limited, and findings to interventions are often inconclusive.

The intervention described in this research study, will be applied to the Writing Centre context. The Writing Centre at the University of South Africa (Unisa) represents an institutional response in addressing the writing needs of students enrolled through distance learning; steered by academic and cognitive support initiatives which are based on learning transformation, connection and dialogue. Driven by an ethos of student-centeredness and "pedagogy of collaborative learning to allow more equitable and flexible approaches" (Richards & Daniels, 2011 p.34) to student learning, the Writing Centre provides concentrated support in developing and cultivating students' reading and writing abilities through cultures of scholarship, agency and academic success.

The aim of this research study is to explore digital web-based portals and its impact on academic writing practices of first-year students at an Open and Distance e-Learning (ODeL) institution. In this study, the acquisition of 'academic literacy' skills refer to the "fluent control and mastery of discipline specific norms, values and conventions of writing as a means of exploring and constructing knowledge in Higher Education" (Jacobs, 2005, p. 485). To complement the acquisition of academic writing skills, a digital writing portal will also be used for students to participate in a range of critical and creative practices that involve understanding, sharing and creating meaning with a variety of technological tools and media.

1.2 RESEARCH CONTEXT

Since 2005 the Writing Centre serves as an integrated student support structure[1] , employing a multi-faceted approach that aims to facilitate the development of Unisa students' academic reading and writing skills within an ODeL setting.

The services provided at the Centre are mainly structured through:

- one-to-one consultations, where diagnostic measures are employed, in-depth cognitive and affective developmental support are provided and a focus towards student ownership in the learning process followed
- the facilitation of academic literacy workshops, both in language and visual literacies, complementing the consultancy services, and
- independent learning programmes to facilitate academic reading and critical thinking practices, whilst introducing students to a combination of divergent and convergent thinking practices for their discipline.

During the 2015 academic year, a group of 1902 first-year students enrolled for the English for Academic Purposes (EAP) module attended tuition-support services structured by the Writing Centre (Writing Centre Report, 2015). Services included academic reading and writing workshops, digital literacy training on how to structure and type assignments, and how to use online dictionaries and

[1] An integrated support structure in this instance refers to embedding the teaching of reading and writing practices within the ways that particular academic disciplines use language (Jacobs, 2005 p.485).

thesauruses effectively. Aside from the aforementioned services, students were also provided access to digital writing platforms and open educational resources to complement the skills acquired to pass the EAP module. These services provided students an ideal platform to practice new skills and to apply these to their activities on the digital writing portal.

1.3 BACKGROUND TO THIS STUDY

In many classrooms across South Africa, digital tools and technologies have become empowering tools in education, to explore “new opportunities for improving access, quality and equity in education, enabling new pedagogies and modes of learning, and their potential to increase the efficiency of education systems” (UNESCO Report, 2012, p. 20). When looking at learning through a digital perspective; it is evident that learning, in the context of distance learning in South Africa, can no longer confine itself using a traditional paper-based method and that web-based educational material as “modes of meaning-making in texts” (Nichols, 2012, p.13), should now equally be considered as a source of learning.

In ODeL the advances of digital technologies in language learning laboratories have broadened a range of teaching and learning opportunities which enable the exploration of learner engagement within the academic ambit. In the case of Computer Assisted Language Learning (CALL), digital technologies have expanded so drastically that lecturers and academic literacy practitioners have started to explore ways to address the contextual needs of students in ODeL tuition-support classrooms. These enquiries allowed for practice-based writing opportunities to enhance the diversity and complexities associated with academic writing tasks.

In the skill-set of writing at university level, cognitive-linguistic activity is often not evident within the framework of both higher and distance education, which motivated the investigation to this study on multimodality to address learner characteristics and language acquisition with the focus on academic writing.

Multimodality in the context of this study, involves a structured approach that involves providing texts in various forms or modes, to communicate meaning and also allow for creativity and flexibility within the language course. These texts may include pictures, videos, audio, digital social interactions and presentations.

In 2015, the Directorate for Counselling and Career Development (DCCD) at an ODeL institution launched its first independent Digital Academic Literacies website; a digital writing portal aimed at immersing first-year students into digital portals to acquire the necessary foundation for academic literacy and skills. This digital writing portal is a structured space of teaching and learning (populated with academic resources) which presupposes that the display of the requisite language and academic literacy skills will facilitate greater understanding of academic writing at undergraduate level. This digital writing portal was hosted on a Sakai website which provide access or links to other sites of learning. These materials were created and curated in a principled mode. The objective of this digital writing portal was to focus on the acquisition of effective practice-based writing opportunities, with the integration of multimodal resources. Using this methodology, these resources can be used to simplify course content to better assist students to work towards the goal of independent learning, with minimal external guidance in selected areas of endeavours.

1.4 PROBLEM STATEMENT

In ODeL, the transfer of academic writing skills from lecturer to first-year students mainly rely on textbooks, study guides and limited face-to-face tutelage between facilitators and students at decentralised, regional centres of learning. At these centres, the integration of technologies to enhance academic language development are often seen as inchoate, especially given the complex individual and social factors associated with the acquisition of formal academic writing skills through technologies. Students, and especially those in their first year of study, whose first language differ from the language of teaching and learning, often struggle to acquire academic English writing skills adequate to attain the academic goals concomitant with their level of study.

In a study conducted as part of a learner support intervention at a decentralised centre of a South African ODeL university, Ward-Cox (2012) observed that "students, for whom the language of learning and teaching (LoLT) is an additional one, are frequently at a linguistic disadvantage due to their inadequate mastery of the language of instruction and academic discourse." (Ward-Cox, 2012, p. 01). With the emergence of new technologies and open educational resources in distance education, the need for an optimal design of a web-based digital writing portal to create flexible, practice-based learning opportunities is crucial for student success.

In looking at issues relating to Computer Assisted Language Learning (CALL), various key issues came to the fore, including that:

- CALL programmes are often behaviouristic in nature, which gives rise to complex issues in the relationship between research and practice (cf. Long, 1996; Pica, 1997)
- although achievable, limited engagement exists between learners and facilitators to mediate the acquisition of structural and stylistic aspects of academic writing across a distance (Trajanovic, Domazet & Misic-Ilic, 2007)
- a limited number of flexible, principled, digital language learning models exist to provide accessible learning opportunities for learners to acquire the necessary skills through digital media (Chien, 2012), and
- the advancement of digital technologies in language learning laboratories has broadened a range of teaching and learning opportunities to explore learner engagement within the academic ambit (Van der Ark & Schneider, 2012).

Yet, amid several intervention strategies in place from regional centres aimed at increasing success rates with regard to Unisa's English for Academic Purposes (EAP) module, various factors can explain the complexities which a lot of EAP students encounter, namely:

- low-literacy levels of students enter higher education, making them underprepared for demands of Higher Education in general (Banda, 2007)

- not enough time within an academic semester to immerse English Additional Language (EAL) speakers into mastering academic writing conventions to reach assessment outcomes, and that
- the link to academic literacies practices and learning technologies are often unstructured and fragmented.

1.5 THE NEED FOR ACADEMIC WRITING SUPPORT IN ODEL

The need to have a structured digital writing portal in place to immerse Additional Language (AL) of English into the academic ambit of academic language is crucial. Such an initiative will provide students with the necessary exposure to use digital texts and multimodal strategies to enhance their learning, whilst acquiring the necessary skills to conduct online research and use digital tools to improve critical academic reading, writing and thinking practices. Such an intervention will play a crucial role in scaffolding students' acquisition of their Cognitive Academic Language Proficiency (CALP). CALP is a language learning related term coined by Cummins (1979), which refers to the language ability required by students to achieve academic achievement in a context-reduced environment. Context-reduced environments are seen as environments where words are usually academic or abstract. In this study, students were introduced to digital technologies and language learning to address their CALP needs. In addition, the infusion of digital technologies with language learning were also included Through the acquisition of CALP by learners, this research study also addressed equity in terms of student support in Higher Education teaching and learning - as previous studies suggested that a skills-based dissonance exists between additional language speakers in higher education and their academic achievement and success (Boughey, 2012; Gunn, Hearn & Sibthorpe, 2011; Lea & Street, 1998).

The integration of a web-based digital writing portal can afford students with study and learning opportunities regardless of time, space or geographical location. In addition, structured support from writing tutors to assist and guide students can be also mediated through effective feedback on their writing. In a study conducted by Thesen (2001), Thesen illustrated how the use of digital and/or multimodal texts

can engage students in acquiring different levels of language suitable for academia. A later study conducted by Archer (2011), supported the findings of Thesen and further suggests that - in cases where multimodal literacies are integrated - that academic literacy skills once acquired, can foster student identity, discourse and power. Archer also found that such integration can better the writing skills of students, and that students can acquire writing conventions, as prescribed by faculty, more successfully. The view that structured intervention using multimodal texts and semiotic resources can introduce and engage students to different levels of English were supported in the work of Thesen (2001) and Archer (2011).

1.6 THE WEB-BASED DIGITAL WRITING PORTAL

As part of the web-based digital writing portal, it was important to integrate multimodal resources (e.g. podcasts, texts, videos, presentation slides) with academic writing support intervention, to improve digital awareness and encourage the mastery of key principles of writing as the foundation for lifelong learning. In this case, a blended learning support structure was needed for the Writing Centre support model, to allow for e-practices and the use of digital technologies to complement one-to-one tutelage.

In teaching and learning literature, this concept is referred to as Computer-Assisted Language Learning (CALL) where activities are seen as “classroom communicative events” (Chapelle, 1994, p.34) in which interaction occurs among participants, student(s) and instructor. In this, Chapelle also commented that to enhance the effective use and study of CALL, teachers and learning developers need to be able to draw upon the significance of CALL theories for language learning to constructively align activities accordingly. Thus, CALL should be supported, enabled and productively partnered with resources for effective learning to occur in the classroom.

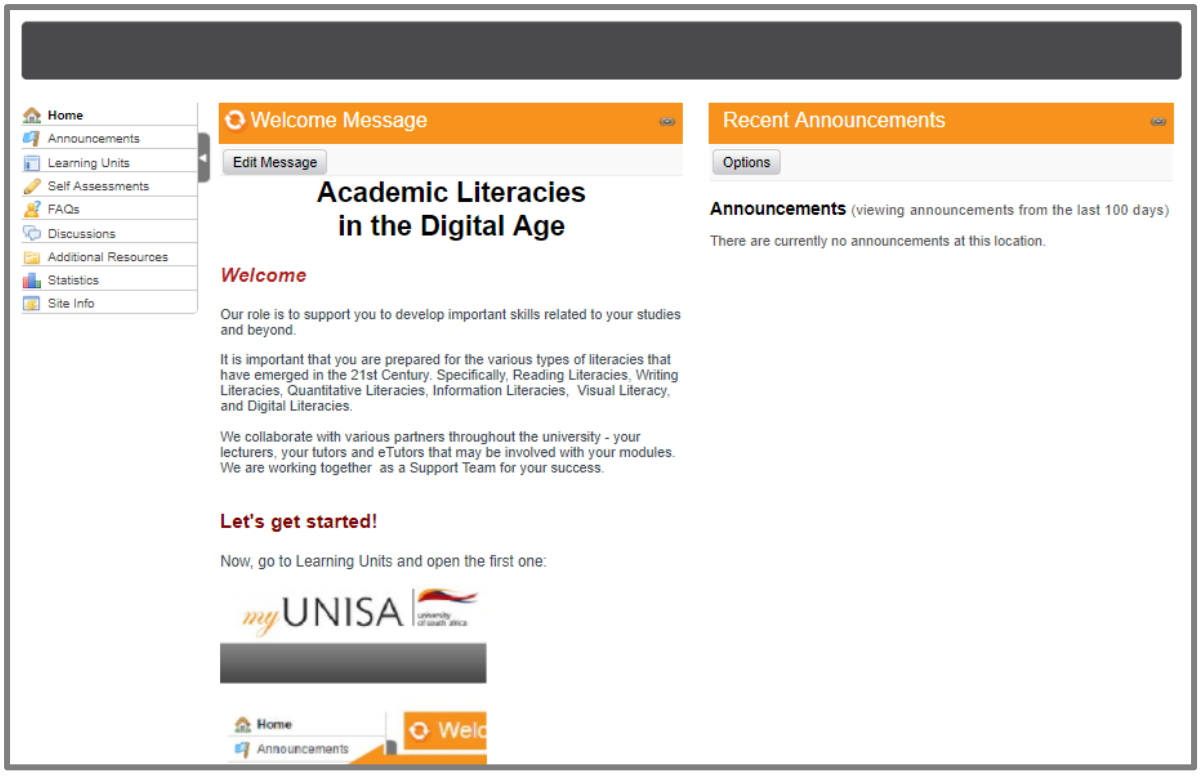


Figure 1: A screenshot from the Home Page to which students need to access the digital writing portal from.

In the web-based digital writing portal, activities (called 'Learning Units') were developed and curated underpinned by a principled approach to enthuse learners to be active participants in the learning process, and to develop the will to engage (Barnett, 2009). The academic writing parts of the portal focused on structure, language and styling with practice- and skills-based activities. Screencasts and podcasts were embedded with activities to assist learners in internalising and consolidating the strategies taught. Materials was curated from Open Educational Resources (OERs), coupled with the use of classroom materials to create a real-life learning opportunity, and to also facilitate understanding to the content being taught. For this, the following considerations were considered in the development of the web-based portal:

1.6.1 CURRICULAR FACTORS IN RELATION TO WEB-BASED TECHNOLOGY INTEGRATION

Curricular factors considered the scope and sequence as aligned to learning, including the presentation methods and content within the materials. The

emphases of the web-based digital writing portal were placed on *writing for academic purposes*, the *integration of academic reading*, and *information literacies*. The aim of the afore was constructively aligned to the outcomes of the EAP module, to promote skills and knowledge in local and global contexts, whilst introducing students to strategies which suit text structures. It was evident that the intervention strategies were not to be integrated in silos but should demonstrate clear orientation and aim to focus on the process of knowledge acquisition apt to first-year-students entering Higher Education.

In looking at the support to this initiative given, materials and tools were put in place to provide a balance and variety in terms of outcomes and tasks afforded by the Writing Centre, nevertheless that cognitive scaffolds were supported by “authentic texts for learners to recognise the skills in familiar and unfamiliar contexts” (Van der Walt, Evans & Kilfoil, 2007, p.364). In addition, content and language used were pitched at first-year level not to be overwhelming for the learning, and to support critical and creative thinking when reading the texts (pitched at differing lengths and language levels).

1.6.2 DIDACTICAL FACTORS IN RELATION TO WEB-BASED-TECHNOLOGY INTEGRATION

This consideration placed the emphasis on the current state of the subject matter, topics, characteristics of facilitators and students, learning theories, multimodal pedagogical strategies, teaching and learning methods and assessment criteria. In terms of didactical factors, the skills needed (e.g. skimming, scanning, prediction, synthesising in research to writing) would enable learners to evaluate information which they retrieved digitally, and to write persuasively and to relay their perspectives in their writing.

In terms of methodology, the activities on site were exploited fully as a means to accommodate factors through various methodologies in Additional Language (AL) learning. However, this study will only focus on connectivism and multimodality in language learning.

The content was to show a logical development of subject matter, to which the assessment design had to foster an academic literacies approach of learning. Self-assessment and feedback tools allow students to self-reflect and become independent thinkers. In addition, naïve sketches and researcher notes were integrated to make it easier for the researcher to achieve the goals set by the study outcomes.

1.6.3 SOCIO-ECONOMIC FACTORS IN RELATION TO WEB-BASED-TECHNOLOGY INTEGRATION

In the last two decades, various researchers indicated a need for authentic classroom materials that are unique, natural, real and close to real life situations (Bex, 1994; Cortazzi & Jin, 1999). The reasons for the latter were that materials should be contextualised to nurture the learner's immediate understanding, to curtail distorting of the learning process and hindrance of the overall understanding of the text.

In applying the views of Bex (1994), in this instance, materials should demonstrate ideas and values that are acceptable to the South African and global communities and should provide a great deal of sensitivity towards those learners studying across 130 countries globally in which this distance learning institution operates. The researcher was of the belief that materials should produce the demonstration of skills and not nurture cultural hostility, nor equip learners to hold an antagonistic attitude towards technology, multimodal resources or academic writing.

1.6.4 INSTITUTION-SPECIFIC FACTORS IN RELATION TO WEB-BASED-TECHNOLOGY INTEGRATION

In terms of institution-specific factors, the web-based digital writing portal of learning steers themes and activities to create a space for learners to experiment and complement what they know. In an earlier study by Clarke and Silberstein (1977), they asserted that "(...) activities should be parallel to the real world" (p. 51) and resemble it as closely as possible. Richards (2005) supports that materials should concentrate on the methods and not the medium. If a web-based digital

writing portal with a repertoire of well-selected vocabulary, reading and writing activities is created, it will allow for progressive development and practice. This will promote the acquisition of both lexical as well as linguistic items in academic writing.

When looking at the support to this initiative given, materials and tools should afford a balance and variety in terms of outcomes and activities, in such a way that skills and practice-based opportunities are (again) supported by unadulterated authentic texts for learners to recognise skills in familiar and unfamiliar contexts (Van der Walt, Evans & Kilfoil, 2007, p. 364).

1.7 RESEARCH AIM AND QUESTION

The aim of this research study is to develop and evaluate a web-based digital writing portal that can support the academic writing skills development of first-year students enrolled for the English for Academic Purposes (EAP) module.

The research question therefore is: *In what way can a web-based digital writing portal support the writing skills development of first-year EAP students at an open distance e-learning institution?*

1.8 RESEARCH OBJECTIVES

The following objectives have been formulated to address the research question, namely to:

- develop a digital writing portal using open educational resources to provide structured and informed use of multimodal materials (videos, podcasts, screencasts, presentation slides, etc.) which support the academic writing development of first-year students enrolled for the EAP module.
- evaluate the web-based writing support portal in terms of conceptual and physical design and the practical utility of such a portal
- understand the experiences of EAP students in using the web-based academic writing portal, and to

- provide suitable recommendations with regard to the computer-assisted language learning practices to mediate academic writing skills development in a web-based learning environment.

1.9 THEORETICAL FRAMEWORKS

In this study, the central frameworks would be focused on multimodality and connectivism.

Multimodality is a term that gained increasing popularity in the mid-1990s (Jewitt, 2009), and which has evolved into a distinct field within interdisciplinary fields that provides platforms for scholars to "investigate various theoretical and methodological stances" (Jewitt, Bezemer & O'Halloran, 2016, p. 1). Although the concept of multimodality can be interpreted in various ways, this study defines multimodality as the use of "hypermedia applications, online virtual worlds, face-to-face interactions and multimodal texts" (Kay et. al., 2013, p. 666) which can "exhibit different learning strategies" (Echevarria, Vogt & Short, 2008) in support of first-year students' academic English writing performance. In essence, with the emphasis on 'mode' or 'modality', multimodality would highlight the multiple employ of meaning-making, notwithstanding that different means of meaning-making exists and may not always be separated. Jewitt, Bezemer and O'Halloran (2016) therefore view multimodality as a field which is generally linked to the following premises. Multimodality is:

- integrated, multimodal whole, through which theories and methods can be develop to account for the ways in which meanings can be produced.
- inseparable from semiotic imagery as various modes may offer various possibilities and constraints
- integration of different resources each with their own significance and potential.
- production and employ of a multimodal whole in the area of content, and
- based on an epistemological perspectives.

Connectivism is a theory of learning - using digital technologies – which gained momentum in 2005 after the seminal works of Downes (2005) and Siemens (2005) were published. In their respective work, they emphasised the role of context to account for how and when learning occurs. The learning in this instance can be viewed as actionable knowledge and connections.

1.10 SIGNIFICANCE OF THE STUDY

The study could provide useful insights for a range of academic and professional practitioners dealing with language learning matters in ODeL. It is one of the first studies to investigate the provision of CALL and academic writing in higher education institutions through the lens of distance learning. Therefore, findings from this study would be most useful for policy makers, academics, educational institutions and professional support staff.

1.11 ETHICAL CONSIDERATIONS

This research project complies with the ethical requirements as stipulated by both Stellenbosch University and the University of South Africa. Throughout this study the researcher ensured that relevant research methods were followed, that accurate data gathering was kept, and that processing and reporting were achieved. In the focus group interviews, the nature, aims and importance of the study were explained to research respondents and their consent was sought prior to the data collection process. The key areas of the Belmont Report and Singapore Statement were explained to them, and data was only collected from those participants whose consent were obtained and who were able to voluntarily participate in this study.

1.12 THE STRUCTURE OF THE RESEARCH

This study is divided into 5 chapters, which are structured as follows:

- Chapter 1 covers the introduction, background and context to this research study. It includes an overview to the problem statement and addresses the research questions, aims, and objectives. The chapter proceeds with a summary to significance of the study and an outline on the ethics process. Lastly, a presentation of the structure of this research study follows.
- Chapter 2 consists of a review of relevant literature. This chapter provides a detailed account of literature germane to CALL, Multimodality, which includes an overview, and theories related to connectivism. This chapter concludes with a meta-analysis on how students learn through personal networks in off-site classrooms.
- Chapter 3 presents the research design framing this study, namely that of Educational Design-based Research (EDR). It looks at the trajectories of practical design, the development model, with a breakdown of the digital writing portal site. Although EDR is iterative in nature, the basis of Bannan-Ritland (2003) will be used, which allows for informed exploration, enactment, local impact and an address of implication for theory or practice.
- Chapter 4 provides an overview on the research strategy and methods, the data collection techniques used, as well as the process of data collection. It clarifies the qualitative method and the use of focus groups and naïve sketches as data collection instruments.
- Chapter 5 presents an overview of the research, summarises key findings and draws conclusions and recommendations for further study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The aim of this chapter is to discuss the theoretical frameworks identified for this research study, namely that of Computer Assisted Language Learning (CALL), Multimodality and Connectivism. These three theories were selected as the theoretical frameworks on which Chapter 3 will be based. This is especially relevant in light of modern-day use of multimedia in authentic e-learning classroom practices.

Technology and multimedia resources enable students to seek out more effective ways of learning, to guide communication and to connect in an ODeL context. In an ever-changing world, technology has the potential to innovate distance learning as it provides students an open space to learn, and to communicate and collaborate with each other. Multimodality and the Connectivism theory offer students the necessary tools to learn, and teachers the necessary pedagogies to understand sources and networks of learning beyond the traditional classroom.

In essence, multimodality means that people use multiple means of meaning-making whereas Connectivism is about the learning through technology in how people learn and share knowledge through networks.

2.2 COMPUTER-ASSISTED LANGUAGE LEARNING (CALL)

The concept of ‘Computer-Assisted Language Learning’ (CALL), also known as Information Communications Technology or Technology-Enhanced Language Learning, is defined by Levy (1997) as "the search for and study of applications of the computer in language teaching and learning" (p. 1). Chapelle refers to CALL and its activities as “classroom communicative events” (Chapelle, 1994, p. 34). The discipline of CALL embraces various current ICT applications and approaches to teaching and learning additional languages, and is integrated nowadays to provide

an active medium between facilitators and students within a language learning classroom.

In earlier works of Garrison (1993), Garrison views educational technology as the ultimate ideal of interactivity. Yet, for many educators or learning facilitators, “educational technology is merely another reminder of the difference between the ideal conditions of learning, and the policy of detailed and controlled teaching” (Halstead, 2012, p.4).

CALL nurtures a different approach than that of pure linguistics, education and computer science, as it has more of an applied nature. In essence, CALL presents an enriched platform on “material in a cost-effective way and that it affords on-demand learning” (Barker & Yeats, 1985 as cited in Halstead 2012, p. 13) whilst also augmenting, rather than supplanting, traditional teaching methods (Halstead, 2012).

2.3 MULTIMODALITY

2.3.1 A HISTORICAL OVERVIEW

Multimodality has been used widely by many scholars including Goodwin (2000), and Kress and Leeuwen (2001). However, it was the earlier works of O’Toole (1994) and Kress and Leeuwen (1996) which started using the term “multisemiotic” to describe the multimodal character of texts (cf. Jewitt, 2012, p.2).

In prior works of Ferdinand de Saussure (1857-1913), de Saussure suggested that linguistics was a branch of a more general science called semiology. Jewitt (2008) extended the concept of multimodality past the traditional psychological and linguistic foundations of print literacy to draw from anthropological, sociological and discourse theory (from the works of Bathes, 1993; Bateson, 1977; Foucault, 1991; Goffman, 1979 & Malinowski, 2006). Furthermore, the influences of cognitive and socio-cultural research on multimodality are also present, particularly in Arnheim’s (1969) models of visual communication and perception.

With the wealth of technologies having increased significantly, the term multimedia has since been used to describe texts. Since its conception from 1996 onwards, multimodality has been another term used in the discussion of pedagogies and the composing practices of students (Jewitt, 2008).

According to Lauer (2009) multimedia and multimodality are often interchangeable in their characterisation, as they both shift in composition from a field that focuses exclusively on teaching students to produce alphabetic print texts, to the acknowledgement that changes communicative landscapes of culture and which seek to prepare students as contributing citizens who can create meaning in texts and interpret the meaning from texts within a dynamic and technological world.

Bezemer, Diamantopoulos, Jewitt, Kress and Mavers (2012) observe that multimodal social semiotics often make historical comparisons to investigate how new technologies reshape the resources available to meaning-makers. For instance, in previous printing technologies the purpose and the number of images in textbooks were always static and limited. Nowadays, technologies are no longer bound by the practical limitations inherent in printed texts and users are offered a more holistic relation of text to imagery, with images dominating pages and facilitating greater engagement with the text page itself. In a pedagogical setting the changes were also visible, as different sets of media dictated a different approach; and the shift from the blackboard to an interactive white board has led to an increased use of visual aid to complement text in the representation of concepts related to different subjects.

2.3.2 WHAT IS MULTIMODALITY?

Multimodality is a term that has been coined by members of the New London Group, Cope and Kalantzis (2000), Kress (2003; 2005) and Kress and Van Leeuwen (2001). Multimodality is not a new concept, as these scholars argue that communication is not limited to one mode (such as text) and realised through one medium (such as a page or the book). Rather, as a result of digitisation, all modes can now be realised through the use of a single binary code, and that the medium of the screen is becoming a primary site where multiple modes can be composed

to make meaning in dynamic ways (Lauer, 2009). From a multimodal perspective, image, action and so forth are the modes, as organised sets of semiotic resources for meaning making (Jewitt, 2008). Jewitt et al (2012) observe that the multimodal social semiotic approach focuses on meaning making, in all modes.

In a study conducted by Tu (2014), Tu explains that online activities are no longer limited to text-based communication nor to computers or online discussions, and that they can now be viewed as a representation of multimodality. This means that the media can be text, audio, video or all three, and the devices to encode information can be that of computers, smartphones and tablets. In addition, these tools can be voice thread, vialogues or even social media-based activities which can include online discussions, language learning and storytelling. According to Jewitt et al. (2012) the term multimodality generally aims to develop a framework that accounts for the way in which people combine distinctly different kinds of making meaning through their epistemological perspective. This means people's perspectives differ on how they interpret the world, and this stems largely from the choice of media that provides meaning to them in a given context.

Lauer (2012) notes that modes and media are independent of - and interdependent with - each other. This means that even though media and modes are different from one another, the media that is used affects the way in which people can realise meaning through its various modes. For instance, the mode of writing is affected differently by the affordances and limitations of the print versus digital media. In the seminal works of Jewitt (2005), he notes that different modes offer specific resources for meaning-making, and the way in which modes contribute to the way people perceive and make meaning, might vary. In some texts writing has become dominant, while in others there might be little or no writing. Jewitt (2005) further notes that a particular design of image and word relations in a text may have a bearing on how the decoded or encoded meaning is shaped. According to Jewitt (2008), the key to multimodal perspectives on especially literacies (the focus of this study) is the basic assumption that meanings are made (distributed, interpreted and remade) through many representational and communication resources.

Jewitt, Bezemer and O'Halloran (2012) formulated the three key premises of multimodality:

- meaning is made of different semiotic resources, each offering distinct potentialities and limitations
- meaning-making involves the production of multimodal wholes
- If we want to study the meaning, we need to attend to all semiotic resources being used to make a complete whole.

Jewitt (2008) defines the theory of multimodality accordingly: that knowledge is represented, and the mode and the media selected are vital aspects of knowledge construction, making the form of representation integral to meaning and learning more generally. Jewitt further explains that it is the manner in which something is represented shapes what is to be learned (curriculum content), and how it is to be learned (the medium). Additionally, to better understand learning and teaching in the multimodal environment of the modern-day classroom, it is then important to explore the ways in which representations in all modes feature in the classroom. Furthermore, the aim of multimodality is on the representations and learning potentials of teaching materials and the way in which teachers and students activate and advocate course-content through their interaction in the classroom.

Tu (2011) observes some benefits of using multimodal resources include that open network learning can become more creative and diversified and move beyond desktop computers to meet learners' personal needs, as well as reflect social and cultural contexts. In the work of Jewitt et al. (2012), there are two key premises to why individuals should engage with multimodality, namely that it is resourceful, and if integrated different modes would complement each other.

In applying multimodal resources to the classroom, there have also been various criticisms to its integration, most prominently that if resources do not address the centrality (or marginality) which link the aim, theory and methods of the intervention, success cannot be expected for the intervention. The intervention therefore needs to adopt multimodal concepts, the design needs to be principled,

and that the “compatibility” (Jewitt, Bezemer & O’Halloran, 2016 p.6) needs to be revisited if the resources are not complementary to the purpose.

2.4 CONNECTIVISM

Duke, Harper and Johnston (2013) define connectivism as actionable knowledge, where an understanding of where knowledge can be found may be more important than answering how or what that knowledge encompasses. According to Kop (2011), connectivism is not a body of knowledge to be transferred from educator to learner nor where learning takes place in a single environment. Instead, Kop (2011) asserts that knowledge is distributed across the web, and that it is people’s engagement with resources that constitutes learning.

Siemens (2004) defines the key principles of connectivism as follows:

- Learning and knowledge can rest in diversity of opinion
- Learning is a process of connecting specialised nodes or information sources
- Learning can reside in non-human appliances
- Capacity to know is more critical than what is currently known
- Nurturing and maintaining connections are needed to facilitate continual learning
- Ability to see connections between thoughts, ideas and concepts are core skills
- Currency is the intent of all learning activities
- Decision making is itself a learning process

According to Siemens (2005), connectivism is a learning theory for the digital age. This theory seeks to explain the changing face of learning in a non-human environment, where learning can take place within an organisation or database. Siemens (2005) state that connectivism incorporates theories explored by chaos, network complexities and self-organisation theories, and that learning occurs within tenuous environments which is not always under the control of the individual.

In essence, Connectivism aims to provide a theoretical framework for the way in which individuals, organisations and technology interact with one another to construct knowledge and learning. In a study conducted by Starkey (2012), Starkey observes that knowledge develops through relationships and connections and in a progressively digital society if peers are to establish and maintain positive learning relationships.

In the work of Conradie (2014), Conradie found that connectivism is an amalgamation of constructivism and cognitivism and is a direct result of a new open learning environment enabled by Web 2.0 technologies. With these technologies and Web 2.0, information is not always easily accessible but also created by learners thus fundamentally changes the way learners interact, function, communicate and learn. Siemens (2005) argues that connectivism is driven by the understanding that decisions are based on the rapid altering foundations. Hence, new information always needs to be acquired. Therefore, it is the learner's ability to differentiate between important and unimportant information that is vital. The ability of the learner to recognise new information can alter the educational landscape as well. In the process of learning, learners need to expand their own learning networks by creating useful and personalised knowledge and connecting ideas and artefacts of others in their networks (Veletsianos, 2010). Moreover, the ability to see, navigate and create connections between nodes becomes the goal of connectivist learning. Anderson and Dron (2011) add that connectivist learning also incorporates stigmergic knowledge of others and the signs they leave which can be detected as learners navigate through learning activities. Anderson and Dron (2011) elaborate that the activities, choices and objects that are left behind by previous users (in cases where they do exist) are mined through network analytics and presented as guideposts and paths into which knowledge can flow to new users.

Downes (2010) articulates that the intent of connectivism is to facilitate the transition from a neat, constrained and centralised learning management system to a distributed environment where learners and instructors are able to employ multiple online services and applications. Within the connectivist theory

environment, knowledge is considered to flow through a network which certain nodes can be considered key for learning, and in turn these learners create networks comprising a variety of nodes for themselves, which are open and filled with knowledge sources that the learner selected (Garcia, Brown & Elbeltagi, 2011). According to Sahin (2012), connectivism can be viewed more as an idea, not a theory. It originally appeared in 1970s when Ivan Illich presented his ideas on "deschooling" education and encouraged a movement towards student-centered, socialised learning opportunities. Illich (1970) stated that a good educational system should have three purposes, namely that it should:

- provide all who want to learn with the access to resources at any time.
- empower all who want to share what they know, to find those who want to learn it from them.
- afford and furnish all who want to present with the opportunity to make their knowledge known.

However, it was Siemens who was recognised as the founder of the connectivism theory. He deemed this theory as a learning paradigm of the twenty-first century (Sahin 2012). Moreover, connectivism is a theory that takes into account the way how learning is influenced by new technological developments.

The concept of a learning theory suggests that it helps to explain how and why change (in learning) happens (Smith 1999 cited in Bell 2011). Siemens (2005) observes that learning theories are concerned with the process of learning, not with the value of what is being learned. In a networked world, the way information is gathered is worth exploring. Conradie (2014) elaborates that, in the connectivism theory, learning is the process of creating connections and developing networks. This allows the development of the concept of "know-where" (where knowledge can be obtained), compared to the "know-how" and "know-what" foci of traditional paradigms.

According to Kop and Hill (2008) connectivism is a theoretical framework for the understanding of learning. The starting point for learning occurs when knowledge is actuated through the process of a learner connecting to and feeding information

into a learning community. Learning occurs in communities where the practice of learning is the participation in the community (Veletsianos 2010). The connectivism theory was created as result of a belief that there was a need for a new learning theory, due to the abundance of new technologies of the digital age. In essence, connectivism seeks to provide a point of differentiation between itself and other learning theories and seeks to assist in the development of current practices in order that learning design in the future will be developed in a manner that learning through digital means will be inherent (Garcia et al., 2011).

Anderson and Dron (2011) state that connectivist learning focuses on building and maintaining networked connections that are current and flexible enough to be applied to emerging problems. In addition, connectivism believes that information is in abundance and that it is the learner's role not to memorise or even understand the information but to have the capacity to find and apply knowledge when and where it is needed. The main goal of the connectivism theory is to create new connections, and classrooms, or any bounded formal education system (Veletsianos 2010). Furthermore, connective theorists are interested in both allowing and stimulating learners to create new learning connections.

Danhar and Umar (2010) observe that connectivism is an evolving learning theory within this move towards the recognition of the importance of social and collaborative interaction in the construction and creation of knowledge. According to this learning theory, knowledge development forms a cycle that starts from the individual with personal knowledge, goes through a network to the organisation and arrives back to the person. Thus, allowing learners to remain current in their field through the connections formed (cited in Danhar and Umar 2010 in Siemens 2005)

According to Duke et al. (2013), connectivism can be regarded as a learning theory for the following reasons:

- Connectivism is characterised as the enhancement of how students learn with knowledge and perception gained through the addition of a personal network. Through these personal networks that learners are able to acquire

viewpoints and a diversity of opinions to learn make critical decisions, and this enable the learner to share and learn through collaboration.

- The abundance amount of data that is made available makes it possible for the learner to know what is needed to critically examine specific situations. The ability to derive huge databases of knowledge empowers learners to seek further knowledge.
- Learning by means of traditional learning theories is severely limited to the rapid change brought by technology.

This theory stresses the importance in the development of meta-skills for evaluating and managing information and network connections and notes the importance of pattern recognition as a learning strategy (Veletsianos, 2010). For Bell (2010) connectivism draws on a diverse set of theories from learning, education, philosophy of knowledge and knowledge management. It is located within a discourse of change in education related to the transformative possibilities offered by new emerging technologies and is available to inform changing pedagogies.

2.5 CRITICISMS TO CONNECTIVISM AS A THEORY

Although Siemens (2005) and Downes (2005; 2010a; 2010b) consider connectivism as a learning theory, scholars such as Verhagen (2006) and Kop and Hill (2008) pose various arguments as to why connectivism is not a learning theory. This section aims to address the criticisms of connectivism as a theory.

Verhagen (2006) criticisms are broadly centered on three areas, namely whether

- connectivism is a learning theory or pedagogy
- the principles advocated by connectivism are present in other learning theories as well.
- learning can reside in non-human appliances

In addressing Verhagen's criticisms, Siemens (2005) claims that he stands by the decision that connectivism is a learning theory for the digital age. For Siemens, he

took into account the conditions in the twenty-first century that are completely different from the traditional ones. Learning occurs through the use of technologies; therefore, connectivism is classified as a learning theory which is contextualised in a digital era influenced by technology in the field of education. Moreover, connectivism is not trying to explain how knowledge forms in our minds. Instead; the more rapidly knowledge develops the less likely it will be that individuals possess knowledge internally. The interplay of network, context and other entities (many that are external) results in a new approach or conception of learning. Siemens (2006) further defends the theory of connectivism, indicating that it is an active creation of our learning networks based on actual learning, as it allows for continued learning through networks, compared to courses which have a set duration and end date.

Siemens (2006) responded that new learning theories of knowledge and learning are a necessity in a digital world. With the exponential rate of which information is made readily available, new possibilities emerge for communication through global networks as well and aggregate through various information streams. Individuals employ different tools for learning and experience knowledge in different formats and a different pace; therefore, through this space a whole development of learning must be created. Individuals are provided the ability to learn beyond vocational skills which leads to the development of individuals as active contributors for quality of life in society. Siemens further argues that knowledge resides in the mind of the individual but in a distributed manner across a network, and that learning is the act of recognising patterns shaped by complex networks.

The networked act consists of two levels:

- *Internal* as neutral networks (knowledge is distributed across the brain, but not held in entirely in one location)
- *Externally* as networks are actively formed (each node presents an element of specialisation and the aggregate represent the ability to be aware of, learn, and adapt to the world around.

Siemens (2006) observes that technology is mobile, embedded, transparent, and ubiquitous. Continual access to technologies requires different vetting processes for knowledge. He further observes that while blogs, wikis, podcasts, and social networking sites are receiving much attention, the real point of interest does not lie in the tools themselves, but the growth the tools represent. The primary affordances include: (a) two-way communication flow, and (b) activities reflective of networked activities of the individual. Learning augmented through technology permits the assimilation and expression of knowledge elements in a way that enables understanding not possible without technology. Siemens also puts forth that rapid knowledge growth requires off-loading the internal act of cognition, sense and meaning making and filtering to a network consisting of human and technology nodes.

2.6 CONCLUSION

The purpose of this chapter was to provide a brief overview on the definitions and descriptions of Computer Assisted Language Learning (CALL), multimodality and connectivism. This chapter provided a meta-analysis on how students learn with knowledge and perception gained through the addition of personal networks and off-site classroom practices to account for a diversity of opinions that facilitate the acquisition of critical decision-making skills, which in turn enables the learner to share and learn through collaboration. The next chapter will investigate whether learning by applying the principles of traditional learning theories is severely limited to the rapid change brought by technology and will focus on educational design-based research, its benefits and approach in putting together a digital writing portal for first-year English language students at an ODeL institution.

CHAPTER 3: RESEARCH DESIGN: EDUCATIONAL DESIGN-BASED RESEARCH

3.1 INTRODUCTION

In research, the quest of finding a suitable research strategy and design process might involve various methods and techniques to create and support scientifically obtained knowledge. (Weldman & Kruger, 2001).

The key purpose of this chapter is to present the methods and techniques applicable to this study, which can support the analysis of findings presented in the follow-up chapters, whilst discussing the research strategy which includes the research design and approach. As this chapter deals with educational design-based research, the strengths and weaknesses of this research approach will be described as dissected over the last decade, reflecting the tension to which proponents advocate and observers criticise educational design-based research, especially concerning the rigour and epistemic standing of the alleged methodology (cf. Barab, 2004; Kelly, 2003).

Educational design-based research is closely linked to the development of innovative educational technologies. Design-based research can be described as “an emerging paradigm for the study of learning in context through the systematic design and study of instructional strategies and tools” (The Design-Based Research Collective, 2003, p.5). The common question asked of educational research is ‘What works?’

However, in the context of instructional strategies and tools, the researcher asks a different question, namely: “What works, for whom, under what conditions?”

Educational design-based research is primarily concerned with context. This concern arises from a multiplicity of methodological implications and challenges that to date, scholars and practitioners of design-based research have only partially

managed to address. The visibility in design-based research as it has been practiced over the last two decades and the concomitant methodological variety (Bell 2004) will also be discussed.

3.2 RESEARCH APPROACH

According to Hussey and Hussey (1997) various principles exist and can be deliberated upon when considering a suitable research approach for a particular study. Research approaches are methods relating to quantitative and qualitative studies within research.

This study employs a qualitative method. This method was decided upon based on a particular research focus to gain insight into student experiences; making use of educational technologies within an ODeL context. Additional to these, this study further aims to explore and understand the experiences of first-year students enrolled for a language course, namely that of English for Academic Purposes (EAP).

In ensuring the validity of this research study, Peshkin (1993) views on qualitative research studies guided this research study, as it is namely set to:

- reveal the nature of certain situations, settings, processes, relationships, systems of people through description.
- gain insights about a phenomenon through interpretation
- develop new concepts or theoretical perspectives about the phenomenon
- discover the problem that exists within the phenomenon
- allow a researcher to test the validity of certain assumptions through verification, claims theories, or generalisation within real-world contexts, and to
- use verification, in order to provide a means through which a researcher can assess the effectiveness of particular policies, practices, and/or innovations

The choice of the set research approach, namely that of a qualitative study, was determined by the nature of the study objectives aligned to the aim of this particular

study. The motivation behind this was gleaned from the work of Leedy and Ormrod (2005) who state that “qualitative research focuses on phenomena that occur in natural settings and involve studying those phenomena in all their complexity” (p. 133). Cooper and Schindler (2007, p.106) found that qualitative research “includes an array of interpretative techniques which seeks to describe, decode, translate and otherwise come to terms with the meaning, not frequency of certain more or less naturally occurring phenomena in the social world”. It is felt that a qualitative research approach would be best suited for this study based on the set aims and objectives of this study.

3.3 EDUCATIONAL DESIGN-BASED RESEARCH: DEFINITION

Educational design-based research refers to a mode of research and development on educational innovations (The Design-based Research Collective, 2003). It reveals a range of characterisations of the nature and purposes of design research.

The research in “design-based research” implies the systematic study of designed learning environments. Thus, the ‘design’ in “design-based research” can refer to any facet of a designed environment that researchers feel requires a systematic study. This can include instructional strategies, broader pedagogical frameworks, or computational and other tools designed to support some kind of learning. Much, if not most, of design-based research includes all of these elements.

In critique, as cited in Bell (2004), Bell asserts that design-based research refers to enterprises, where intentional design is coupled with empirical research. In addition, it also involves the level of theorising about what takes place within authentic, classroom contexts “where the designed objects come to be used” (Bell 2004, p. 245).

Considering various literary works pertaining to design research, design-based research can be characterised as research which holds as set of epistemic and social commitments. In essence, design research:

- pursues joint goals of improving practice and refining theory

- occurs through iterated cycles of a design, enactment, and analysis
- employs methods that link processes of enactment to outcomes
- involves sustained engagement with stakeholders
- strives to produce usable knowledge

3.4 CONDUCTING EDUCATIONAL DESIGN-BASED RESEARCH

In light of the theoretical research variety and the different strengths linked to such a variety, it may not even be desirable to articulate and advocate a single approach to conduct design-based research. In addition, design research frames and addresses a set of methodological issues that demarcate it from other approaches to educational research.

3.4.1 GENERAL CYCLE OF EDUCATIONAL DESIGN-BASED RESEARCH

Educational design-based research is often described as research that iterates through a cycle of design, enactment, analysis, and revision (Bielaczyc & Collins 2007; Cobb et al. 2003; Design-based Research Collective, 2003). Since designs are developed to solve particular kinds of problems, design-based research really starts with a problem or situational analysis to determine its relevant requirements (Edelson, 2002).

A good problem analysis is what Bereiter (2002) observes as a visionary quality-focused innovation that goes beyond notions of programme improvement or increasing efficacy, and which is underpinned by ‘an ethos of potential and possibility’ (Luckin, Puntambekar & Goodyear, 2013). A problem analysis leads to initial design of a design-based teaching and learning environment. Crucially, design-based research sees design as a theoretical entity, which embodies theoretical conjectures about learning in the chosen problem context and how such learning can be supported (Cobb et al., 2003; Confrey & Lachance, 2000; Sandoval, 2004). For developers of educational technologies, it is particularly

crucial to recognise that social elements of learning environments also require design (Bielaczyc, 2006).

Design research is characteristically open to revision on the go, during enactment as both are means to improve learners' experiences as needed and to pursue hypotheses about learning or its support to the movement (Gravemeijer & Cobb, 2006).

3.4.2 METHODOLOGICAL ISSUES IN DESIGN RESEARCH

Educational design-based research shares the challenges of any empirical research, but both the role of design in the approach and the contextualisation assumption raise issues unique to research design. Defining and accounting for contextual variations and their influences on the conclusions that can be drawn from design research have been the focus of much writing about research design (Brown 1994; Collins, 1999; Steffe & Thompson, 2000; Barab, Hay & Yamagata-Lynch, 2001; Hoadley, 2002; Cobb et al., 2003; Collins, Joseph & Bielaczyc, 2004; Tabak, 2004).

3.4.3 SITE SELECTION

Site selection, in the early stages of design research, is more about selecting collaborators than sites. The collaborative nature of design research highlights that site selection affects not merely issues of sampling but influences the designed environment directly because of the inevitably blurry intermingling of the external design and the existing ongoing designed and emergent features of the setting into which designs are imported (Tabak, 2004).

3.4.4 INSTRUMENTATION AND OUTCOME MANAGEMENT

Technology-orientated work often aims to transform both how and what students learn (Roschelle et al., 2000). This creates a challenge when designing instruments that can measure the outcomes of interest.

Schwartz, Chang, and Martin (2008) argue that design researchers can profit from more attention to issues of instrumentation and measurement. Schwartz et al. (2008) further argue that the design of good measures is important for generating evidence appropriate to the innovations of design research, for the modest reason that more widely measures are tuned to practice experiments.

3.4.5 CHARACTERISING RELEVANT PROCESSES

The assumption is that a design-based research team has access to set outcome measures. However, the enterprise requires methods to characterise the processes at work in a learning environment that are causally responsible for those outcomes. Critics of design research are concerned that designers are biased toward showing how 'well' the intervention works (Shavelson et al., 2003). However, design-based research demands attention to negative results so that sustainable innovation can be reached (Bereiter, 2002).

In essence, design is iterative by nature because early designs rarely solve their target problem fully, and the impetus of design is improvement. This naturally tunes design researchers to shortcomings in designs and focuses analytic attention on the causes and possible solutions (Sandoval, 2004). This is how educational research design advances theoretical insight: by driving analyses of processes of design enactments that refine the conjectures embodied in designs.

3.4.6 WORKING ACROSS LEVELS OF ANALYSIS

Collins (1999) articulated several levels at which particular designs could be analysed moving from the individual cognitive level through to the institutional level (e.g. the university) and lists a range of variables design researchers might attempt at each level. It is not clear whether any single decision or research effort within a particular research cycle could attend to all of these levels simultaneously. Collins

et al. (2004) suggest that multi-disciplinary teams with the expertise distributed across all of these levels could work, but it may not be feasible - especially in the early stages of a design research effort - to engage such teams.

3.4.7 TRAJECTORIES OF PRACTICAL DESIGN IMPROVEMENT

A few design researchers who have addressed the learning and design trajectories suggest a progression from small to broad scale, with an orientation on practical design improvement (Bannan-Ritland, 2003; Edelson, 2002; Middleton et al., 2008). The latter tends not to show and address how shifts in scale actually change the research effort, whether in terms of the object nor how the design work as projects increase their scale or the attendant research foci. Fishman, Marx, Blummenfield and Krajcik (2004) provided a well-articulated example of how the movement of technology-supported curricula from small to large scale changed the nature of both the design and research efforts. It is not obvious that a trajectory of increasing scale is the only, or most important, trajectory for design research. There are examples of design research projects that seem more focused on delving deeper into the learning phenomena of interest, such as the example of Lehrer and Schauble's work on children's reasoning about data (Lehrer, Schauble & Lucas, 2008).

The aim of this section is to share ideas pertaining to the inherent approach and then convey the variety of ways the expanding design research community has pursued them. In addition, the characterisation of methodological issues seems to be inevitable when doing design-based research. As the possibilities for educational technologies in the twenty-first century become more ubiquitous, mobile, and personal, there is no doubt that design-based research will migrate into many more kinds of settings to investigate many more contexts of learning.

3.5 RESEARCH PARADIGM: DESIGN-BASED RESEARCH

The emphasis that learning takes place in an environment consisting of interacting systems. This point is corroborated in research by Cobb et al. (2003), in seeing learning as interrelating rather than a collection of isolated activities or a list of separate factors influencing learning. In Applied Linguistics, the concept of learning ecology is used which refers typically to the tasks or problems that students are asked to solve, the kinds of discourses that are encouraged, the norms of participation that are established, the tools and related material means provided, and the practical means by which writing facilitators or tutors can arrange relations among these elements.

Design-based research has the ability to “create and extend knowledge about developing, enacting, and sustaining innovative learning environments” (Design-based Research Collective, 2003, p. 5). In addition, this enables a researcher to include interactions between students and the environment into the research that goes beyond cognitive and psychological aspects. In design-based studies, a potential pathway for learning is developed as a hypothesised learning process and operationalised in learning materials. By planning a sequence of learning activities, a design-based study is reflective and results in new conjectures may lead to improvement of the materials. Each iterative design is evaluated through data on both learning and on the means by which that learning was generated and supported. Therefore, in design-based research, a complex array of data needs to be collected such as products of learning (student work), classroom discourse, body posture and gestures, task and activity structures, patterns of social interaction, responses to interviews, and so forth.

However, Educational Design-based research has four areas of focus, namely that of:

- exploring the possibilities for creating new learning environments.
- increasing the capacity for educational innovation.

- developing theories of learning and instruction that are contextually-based.
- advancing and consolidating design knowledge.

Bukhardt and Schoenfeld (2003) observe that traditional educational research does not generally lead to improved practice, due to lack of credible models. However, an engineering approach to design educational processes leads to refined ideas and materials, which are robust across a wide range of contexts. Also, Kelly and Lesh (2000) and Wittmann (1995) advocate the use of design-based studies in their work more.

3.6 DEVELOPMENT MODEL

This research study was framed by a model for the development of instructional materials, adapted from four generic instructional design models, by Smith and Ragan (1999) Visscher-Voerman (1999), Bannan-Ritland (2003) and Rogers, Preece and Sharpe (2011). These models have several phases. For this particular study, I have adapted this model to focus on the implementation and spread in the development of a web-based writing portal. The various stages used in this design-based research portal was that of the establishing requirements, the design, prototyping, construction, and evaluation.

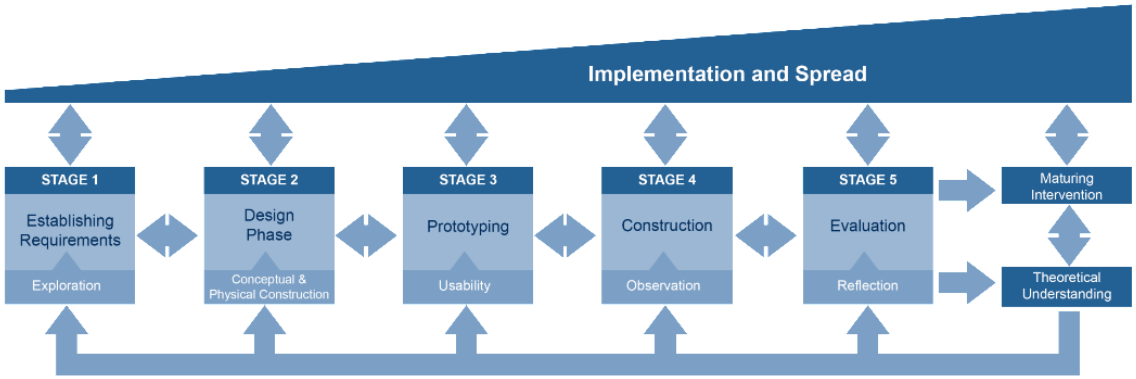


Figure 2: An integrated model adapted from four generic instructional design models.

3.6.1 ESTABLISHING REQUIREMENTS

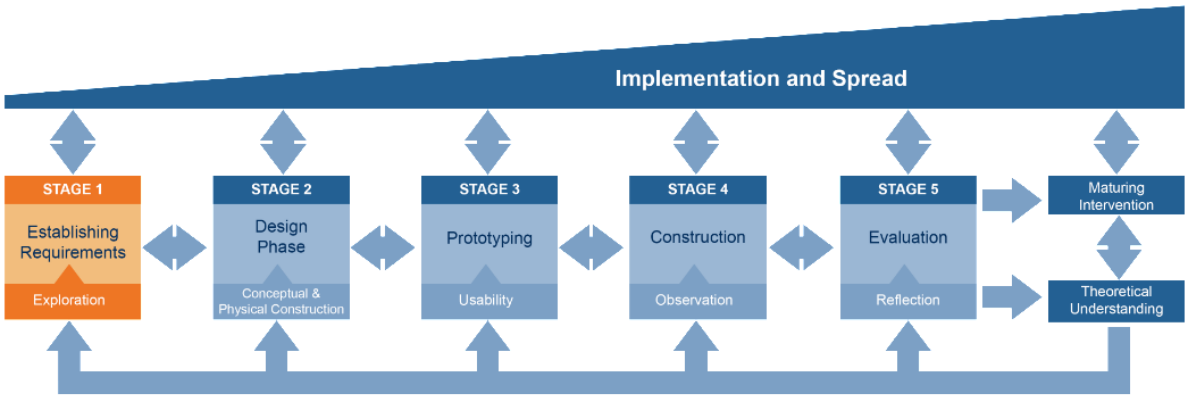


Figure 3: This stage focuses on establishing requirements as part of the exploration phase of design-based model.

In this phase several instructional principles were formulated. Furthermore, the use of open-ended questions for discussions between students enhanced interactivity between peers. In the *establishing requirements* phase, the researcher became aware that students, enrolled for the English for Academic Purposes (EAP) module, are all adult learners with a large majority of them being additional language speakers of English. Therefore, it was important to create more of a structured, interactive site which provide learning opportunities through different media to provide a richer experience of language learning and to offer the learner choice of approach and route (Parish, 1995). It was equally important to increase attempts at personalising the language learning process in distance learning, by encouraging learners to discuss topics using the conventions on the site as a guide to work through activities while still being engaged with language learning.

According to Conger and Mason (2009) forming an ideal relationship with one's audience requires imparting overall "understandability, usability and quality (...) which are fundamental to establishing a successful relationship between the presenter and the viewer". Without these three elements, the presenter is most likely to fail to engage the learner and may never establish a relationship. What is particularly evident, especially with regard to this particular audience, is that the researcher had to ascertain whether the site would be used to inform, educate, to

enable some intellectual exchange. Often considering the lack of High Speed Third Generation (3G) connectivity a good design has to take into account the needs of the researcher's specific audience, the task the researcher wants them to accomplish, the shortcomings often associated with the Hypertext Mark-up Language (HTML) on a Sakai-based site and the practical limitations of networks, especially when considering that most of this particular audience reside in marginalised areas with low network connectivity. If the intended goals are set, one should then consider what kind of experience it is that one has to provide.

In this situation, and given that the goal is to assist undergraduate students to improve their English academic writing the system in place should empower undergraduate students to make their transition academically, yet also provide a space on my portal to "create, update, manage, and maintain massive (and relevant) amounts of content within the site itself" (Husain, 2012, p. 253). In addition, the web design should be clear, precise, easy to understand, interesting and informative all at the same time. Herein, the concept of 'usability' is applicable as it refers to "the methods of improving ease-of-use during the design process" (Neilson, 2003, p. 2).

In terms of 'audience' as part of exploration, the emphasis is solely on localisation and facilitating academic understanding within the African context. In continuously trying to ascertain what the audience needed, it became apparent that there was a lack of localised examples in coursework which hindered the relay of course information in their reading and critical thinking. In the design it was important for the audience to constantly be stimulated, occasionally challenged and serviced at the highest possible standards (Nielsen, 2006). The emphasis also has to fall on creativity and curiosity, but also provide a space for the audience to engage and establish a pedagogical connection that open functionalities for retention. An important aspect of audience and intended goal consideration is that web-accessibility initiatives such as accommodating students with assistive technology should also be considered.

3.6.2 DESIGN PHASE

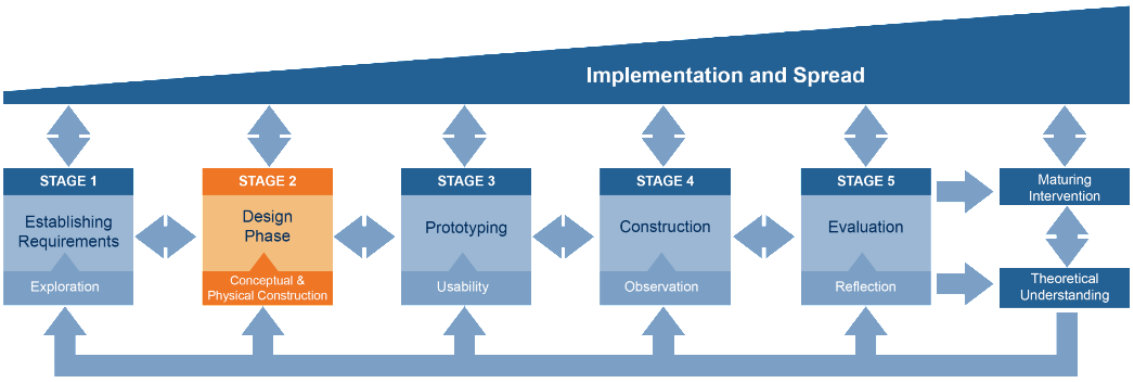


Figure 4: The Design Phase entails aspects of conceptual and physical design.

In this phase, the design phase resources were identified. This phase also included the selection of sites for the interventions. During this phase the researcher made use of the formal Learning Management System (LMS) of the institution to host all his activities. The researcher already had a good understanding of the LMS, which would require an understanding of both the subject and instructional media (Friedman, 1997 as cited in Cook & Dupras, 2004, p. 698). In insights gleaned from various 'What makes a good website design' principles surveyed (Nielson, 1999 & 2010; Cook & Dupras, 2004; Sklar, 2006; Gaffney, 2009; Conger & Mason, 2009), the following cogent principles are all evident in these materials consulted.

3.6.2.1 LAYOUT EFFECTIVENESS, AFFECTIVENESS AND NAVIGATIONAL EFFICIENCY

In terms of planning and designing effective websites, Conger et al (2011) differentiate between three essential criteria for designing successful websites, namely that of

- effectiveness,
- affectiveness, and
- navigational efficiency.

These three elements are considered to be three overarching criteria to help to establish the functionality of the website into its complete compositions. Website effectiveness refers to the rational criterion which measures skills-transfer and that the site would be “complete, sensibly organised and accurate in conveying the intended message” (Conger et al., 2011, p. 11). Affectiveness refers predominantly to the emotional criterion of capturing the viewer’s attention by being “interesting, stimulating and enjoyable” (Conger et al., 2011, p. 11), whereas navigational efficiency refers to “the ease with which users can locate the information they want” (Conger et al., 2011, p. 11).

In good website design these elements should work in concord to create a good impression on pages and to (as information gets updated) still remain relevant and reflect favourably through content organisation.

3.6.2.2 PAGE ORGANISATION AND TYPES OF CONTENT

Good websites emphasise the completeness of the information provided. In outline to the criteria set for content; content should always be relevant and must be reviewed for timeliness, completeness and appropriateness for the organisation’s purposes (Conger et al., 2011).

In good websites content and proper organisation are mutually linked, as proper organisation of displayed information is required for enhancing its understanding by the user, and for reducing the number of times the users need to click to reach the required information. Content can be in the form of copy, images, video and audio clips and downloads.

In writing and curating the content, it is advisable to take cognisance of the tone and style of content on the website and for the quality and deployment of images across the site (Husain, 2012). The use of high-calibre, yet accessible language and vocabulary also makes the purpose and the intent of the website accessible to a wide array of audiences. This can enhance web-attitudes and legibility while also attracting the necessary attention and focus of the audience. Types of content can include text, graphics, videos, applets, sound, and forms or surveys to be completed. Good websites are very selective and principled in their employ of

multimodality. As the basic purposes of multimedia enhancements are description, decoration, exploration and/or demonstration (Conger et al., 2011), it is imperative that the digital writing portal has to suit the purpose and format with the goals of effectiveness, affectiveness and efficiency in mind. Web designers often overuse graphics in an attempt to seize and retain users' attention through visual aesthetics, yet the unskilful integration of text and graphics often make web sites less engaging.

3.6.2.3 LANGUAGE, CONSISTENCY, CLARITY, USER-FRIENDLINESS

Good language is needed to relay information and "in mapping the relationships between information objects" (Conger et al., 2011, p. 28). This is especially important to complement visual materials used, to specify various domains, and to translate the information offered into a coherent text so that whatever is presented can lead to a "coherent interpretation of the organisation and its information" (Conger et al., 2011, p. 28).

3.6.2.4 VISUAL DESIGN, STYLE USABILITY AND THE INTEGRATION OF GRAPHICS

Visual Skills refers to the ability to be mindful of user and technical limitations (Conger et al., 2011). These include knowledge of multimedia tools and techniques, multimedia selection, graphic design, page layout and multimedia design capabilities. Image quality and colour were used judiciously as a means to attract the user, simplistic backgrounds to illuminate important information, the use of primary colours to deliver the intended message through display, and to use animated files to complement information rather than to impress the audience.

Animated files and pictures also provide a semantic countenance to quoted words, lending credibility and making materials less abstract. A simplistic minimalistic design provided a clean layout which can enhance faster loading times and afford more attention to the actual content and details, as well as stimulating audiences through a visually clean structure. In addition, navigation between text was integrated appropriately and effortlessly as these should be transparent to guide the user to sections for retrieval of with a minimum number of clicks.

3.6.3 PROTOTYPING

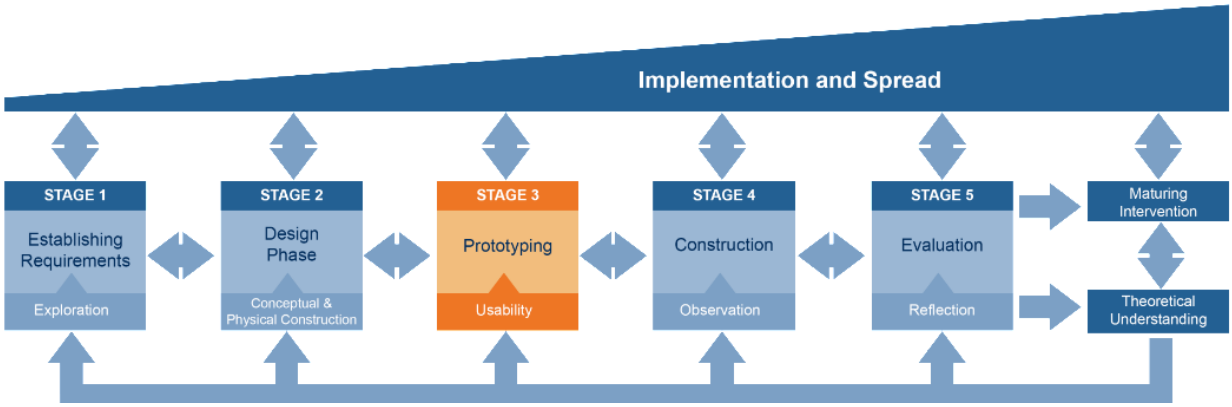


Figure 5: The Prototyping phase pertains to the usability of the intervention.

In the ensuing Prototyping phase, materials were conceived. In this phase, expert appraisals with subject specialists were organised for feedback on the first prototype (version 1). Three key observations made by the researcher during this phase were that:

- Material curation would provide for a greater level of personalisation and localisation of practice-based and skills-based activities.
- Principled use of multimedia would not only address learner variances, but also provide creativity for use while instilling better consolidation of content. This would also lead to more affectively, engaging content, especially in videos where learners were able to rewind and fast-forward videos on academic writing.
- Multimodality would provide more opportunities for learners who have a more kinaesthetic learning style preference.

Thus, in this phase the first prototype versions were validated into a second version, which was ready for testing practice.

3.6.4 CONSTRUCTION PHASE

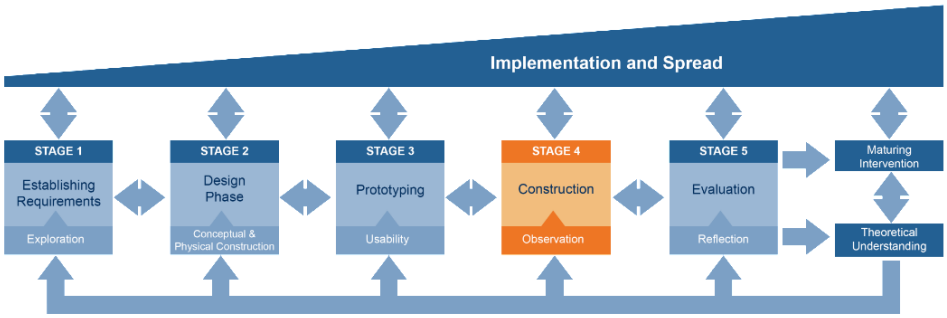
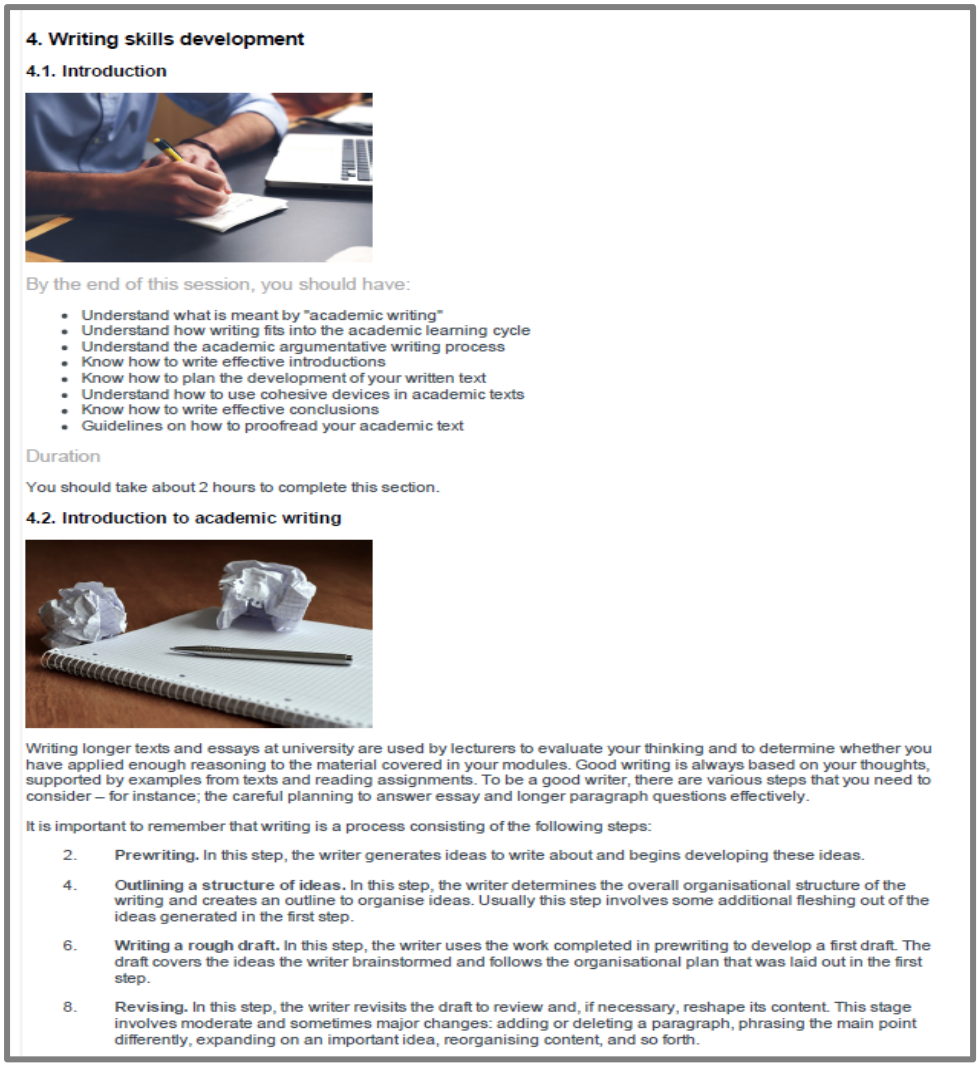


Figure 6: The Construction phase of the module links to the observation of the Prototype.

The construction phase contained an intervention online, in which the prototype materials were made accessible to students. In all interventions, learners had the option to either work individually or in organised groups of between three to five students.



4. Writing skills development

4.1. Introduction

By the end of this session, you should have:

- Understand what is meant by "academic writing"
- Understand how writing fits into the academic learning cycle
- Understand the academic argumentative writing process
- Know how to write effective introductions
- Know how to plan the development of your written text
- Understand how to use cohesive devices in academic texts
- Know how to write effective conclusions
- Guidelines on how to proofread your academic text

Duration

You should take about 2 hours to complete this section.

4.2. Introduction to academic writing

Writing longer texts and essays at university are used by lecturers to evaluate your thinking and to determine whether you have applied enough reasoning to the material covered in your modules. Good writing is always based on your thoughts, supported by examples from texts and reading assignments. To be a good writer, there are various steps that you need to consider – for instance; the careful planning to answer essay and longer paragraph questions effectively.

It is important to remember that writing is a process consisting of the following steps:

2. **Prewriting.** In this step, the writer generates ideas to write about and begins developing these ideas.
4. **Outlining a structure of ideas.** In this step, the writer determines the overall organisational structure of the writing and creates an outline to organise ideas. Usually this step involves some additional fleshing out of the ideas generated in the first step.
6. **Writing a rough draft.** In this step, the writer uses the work completed in prewriting to develop a first draft. The draft covers the ideas the writer brainstormed and follows the organisational plan that was laid out in the first step.
8. **Revising.** In this step, the writer revisits the draft to review and, if necessary, reshape its content. This stage involves moderate and sometimes major changes: adding or deleting a paragraph, phrasing the main point differently, expanding on an important idea, reorganising content, and so forth.

Figure 7: The web-based digital writing portal introductory page.

In the construction phase I focused on creating content and constructing a layout that can complement the user experience. During the curation of Open Education Resources relating to language development there was a strong emphasis on student-centred materials that allow learners to work independently. A principled approach to have texts, videos and resources embedded provided extra assistance where they were able to watch step-by-step video tutorials on how to approach academic writing.

10. **Editing.** In this step, the writer reviews the draft to make additional changes. Editing involves making changes to improve style and adherence to standard writing conventions—for instance, replacing a vague word with a more precise one or fixing errors in grammar and spelling. Once this stage is complete, the work is a finished piece and ready to share with others.

This unit is designed to help you understand that writing is a process, and to help you become a more efficient and effective writer. This section will introduce you to the various stages of the writing process, and will also give you some useful tips on how to improve your writing at university level.

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4.3. Argumentative writing at University

As a university student, writing argumentative essays can often be a very complex and demanding cognitive ability: especially when writing in your second or third language. Even putting your ideas to paper can be a very scary and daunting task, especially when you are writing for a professional audience.

Aside from being assessed on your content, structure, language and styling, you are often expected to read fairly long texts, having to comprehend the main ideas and then having to write arguments to support your views.

This section will focus on

- improving your general argumentative writing skills,
- developing your ability to write critically with comprehension and insight, and to
- developing your ability to write logically and effectively.

A vital part of any field of study or of any career is the ability to comprehend what you read and, after reflection, to respond to that written material logically and coherently. Writing is not an easy process even for experienced writers. To write well, you constantly need to reshape, refine and rewrite. Many times inexperienced writers often write poorly because they do not know that writing is not a linear process but requires constant reworking and revision in their initial ideas.

Some of the most important questions you need to ask yourself before beginning are:

2. Who are your readers?
4. What do they expect?
6. What do they know about the subject?
8. What special terms or concepts might you use that will have to be explained to your readers?
10. What is the purpose of your writing?

When you write for your lecturer there are particular requirements that have to be met. Although you know that your lecturer marking your assignment is knowledgeable, you have to write as if s/he knows nothing about the topic. So, your style must be suited for an academic audience. Academic arguments are always written formally. In addition, it is based on logic rather than emotion and your tone should always reflect this.

4.4. Pre-writing

Prewriting is the stage of the writing process during which you transfer your abstract thoughts into more concrete ideas in ink on paper (or in type on a computer screen). Although prewriting techniques can be helpful in all stages of the writing process, the following four strategies are best used when initially deciding on a topic:

2. Using experience and observations
4. Reading
6. Freewriting
8. Asking questions

At this stage in the writing process, it is OK if you choose a general topic. Later you will learn more prewriting strategies that will narrow the focus of the topic.

Choosing a topic

Figure 8: The Argumentative Writing section of the web-based digital writing portal.

Argumentative writing constitutes 50% of the EAP student's formative assessment. Additional resources were curated and developed. Aligned to the theory of multimodality, text now creates interactive opportunities for increasing the learner's reception what is being presented through an idea or concept.

Brainstorming

Brainstorming is similar to list making. You can make a list on your own or in a group with your classmates. Start with a blank sheet of paper (or a blank computer document) and write your general topic across the top. Underneath your topic, make a list of more specific ideas. Think of your general topic as a broad category and the list items as things that fit in that category. Often you will find that one item can lead to the next, creating a flow of ideas that can help you narrow your focus to a more specific paper topic.

Idea mapping

Idea mapping allows you to visualize your ideas on paper using circles, lines, and arrows. This technique is also known as clustering because ideas are broken down and clustered, or grouped together. Many writers like this method because the shapes show how the ideas relate or connect, and writers can find a focused topic from the connections mapped. Using idea mapping, you might discover interesting connections between topics that you had not thought of before. To create an idea map, start with your general topic in a circle in the center of a blank sheet of paper. Then write specific ideas around it and use lines or arrows to connect them together. Add and cluster as many ideas as you can think of.

Searching the internet

Using search engines on the Internet is a good way to see what kinds of websites are available on your topic. Writers use search engines not only to understand more about the topic's specific issues but also to get better acquainted with their audience. When you search the Internet, type some key words from your broad topic or words from your narrowed focus into your browser's search engine (many good general and specialized search engines are available for you to try). Then look over the results for relevant and interesting articles.

Results from an Internet search show writers the following information:

- Who is talking about the topic
- How the topic is being discussed
- What specific points are currently being discussed about the topic

Narrowing the focus

Narrowing the focus means breaking up the topic into subtopics, or more specific points. Generating lots of subtopics will help you eventually select the ones that fit the assignment and appeal to you and your audience.

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4.5. Writing an outline

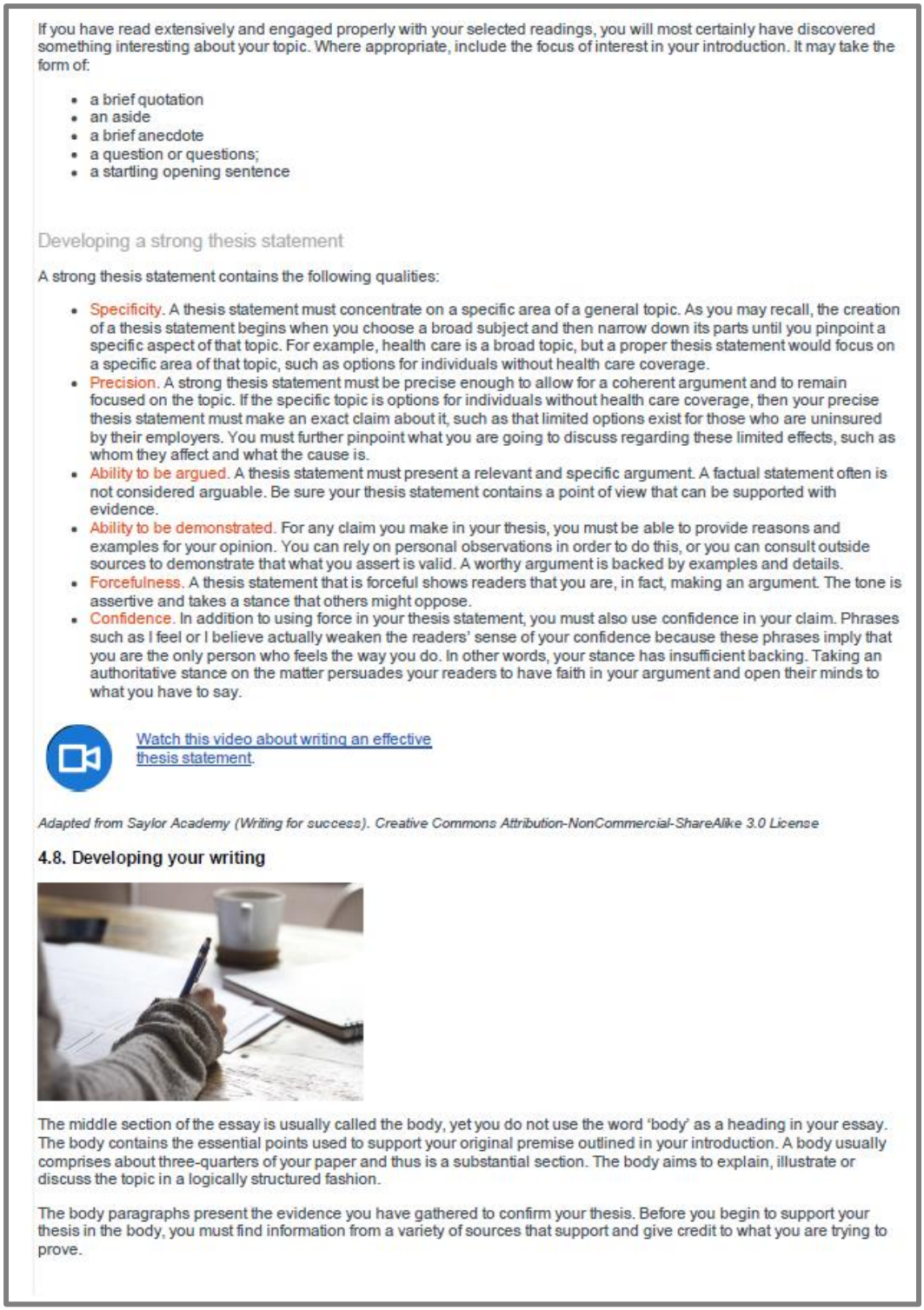
Creating an outline for an essay will help you to stay focused in a stressful situation and to include all the good ideas that help you explain or prove your point. A formal outline is a detailed guide that shows how all your supporting ideas relate to each other. It helps you distinguish between ideas that are of equal importance and ones that are of lesser importance. You build your essay based on the framework created by the outline.

Here is what the skeleton of a traditional formal outline looks like. The indention helps clarify how the ideas are related.

2. Introduction
4. Thesis statement
6. Main point 1 (becomes the topic sentence of body paragraph)
    2. Supporting detail (becomes a support sentence of body paragraph 1)
        2. Subpoint 2.
        4. Subpoint 2.
    4. Supporting detail
        2. Subpoint
        4. Subpoint
    6. Supporting detail
        2. Subpoint

Figure 9: The "Writing an outline" section of the web-based digital writing portal.

This section introduced students to draw on multiple modes to establish meaning. Aligned to the theory and approach of multimodality, linguistic and visual design guided students in foregrounding important concepts and backgrounding less important information in building their written text.



If you have read extensively and engaged properly with your selected readings, you will most certainly have discovered something interesting about your topic. Where appropriate, include the focus of interest in your introduction. It may take the form of:

- a brief quotation
- an aside
- a brief anecdote
- a question or questions;
- a startling opening sentence

Developing a strong thesis statement

A strong thesis statement contains the following qualities:

- Specificity. A thesis statement must concentrate on a specific area of a general topic. As you may recall, the creation of a thesis statement begins when you choose a broad subject and then narrow down its parts until you pinpoint a specific aspect of that topic. For example, health care is a broad topic, but a proper thesis statement would focus on a specific area of that topic, such as options for individuals without health care coverage.
- Precision. A strong thesis statement must be precise enough to allow for a coherent argument and to remain focused on the topic. If the specific topic is options for individuals without health care coverage, then your precise thesis statement must make an exact claim about it, such as that limited options exist for those who are uninsured by their employers. You must further pinpoint what you are going to discuss regarding these limited effects, such as whom they affect and what the cause is.
- Ability to be argued. A thesis statement must present a relevant and specific argument. A factual statement often is not considered arguable. Be sure your thesis statement contains a point of view that can be supported with evidence.
- Ability to be demonstrated. For any claim you make in your thesis, you must be able to provide reasons and examples for your opinion. You can rely on personal observations in order to do this, or you can consult outside sources to demonstrate that what you assert is valid. A worthy argument is backed by examples and details.
- Forcefulness. A thesis statement that is forceful shows readers that you are, in fact, making an argument. The tone is assertive and takes a stance that others might oppose.
- Confidence. In addition to using force in your thesis statement, you must also use confidence in your claim. Phrases such as I feel or I believe actually weaken the readers' sense of your confidence because these phrases imply that you are the only person who feels the way you do. In other words, your stance has insufficient backing. Taking an authoritative stance on the matter persuades your readers to have faith in your argument and open their minds to what you have to say.

Watch this video about writing an effective thesis statement.

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4.8. Developing your writing

The middle section of the essay is usually called the body, yet you do not use the word 'body' as a heading in your essay. The body contains the essential points used to support your original premise outlined in your introduction. A body usually comprises about three-quarters of your paper and thus is a substantial section. The body aims to explain, illustrate or discuss the topic in a logically structured fashion.

The body paragraphs present the evidence you have gathered to confirm your thesis. Before you begin to support your thesis in the body, you must find information from a variety of sources that support and give credit to what you are trying to prove.

Figure 10: Videos and podcasts were embedded on how to develop strong thesis statements.

As several learners struggle in putting together strong thesis statements, videos and podcasts were used to enhance the learning experience of the student. This afforded students the opportunity to acquire the knowledge and skills to use more than just text-based resources. In essence, multimodality became an integrated meaning-making system of electronic multimedia texts.

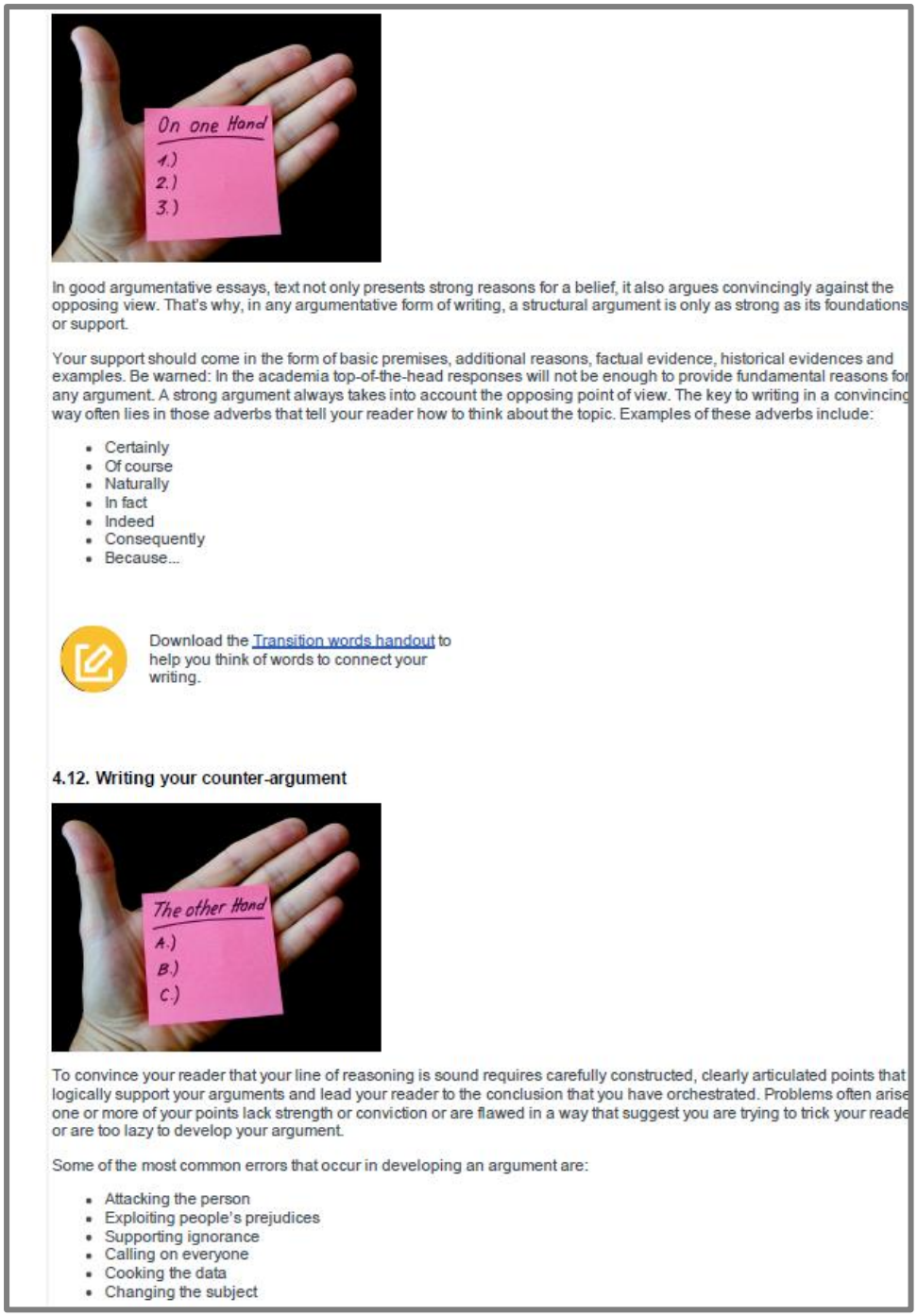
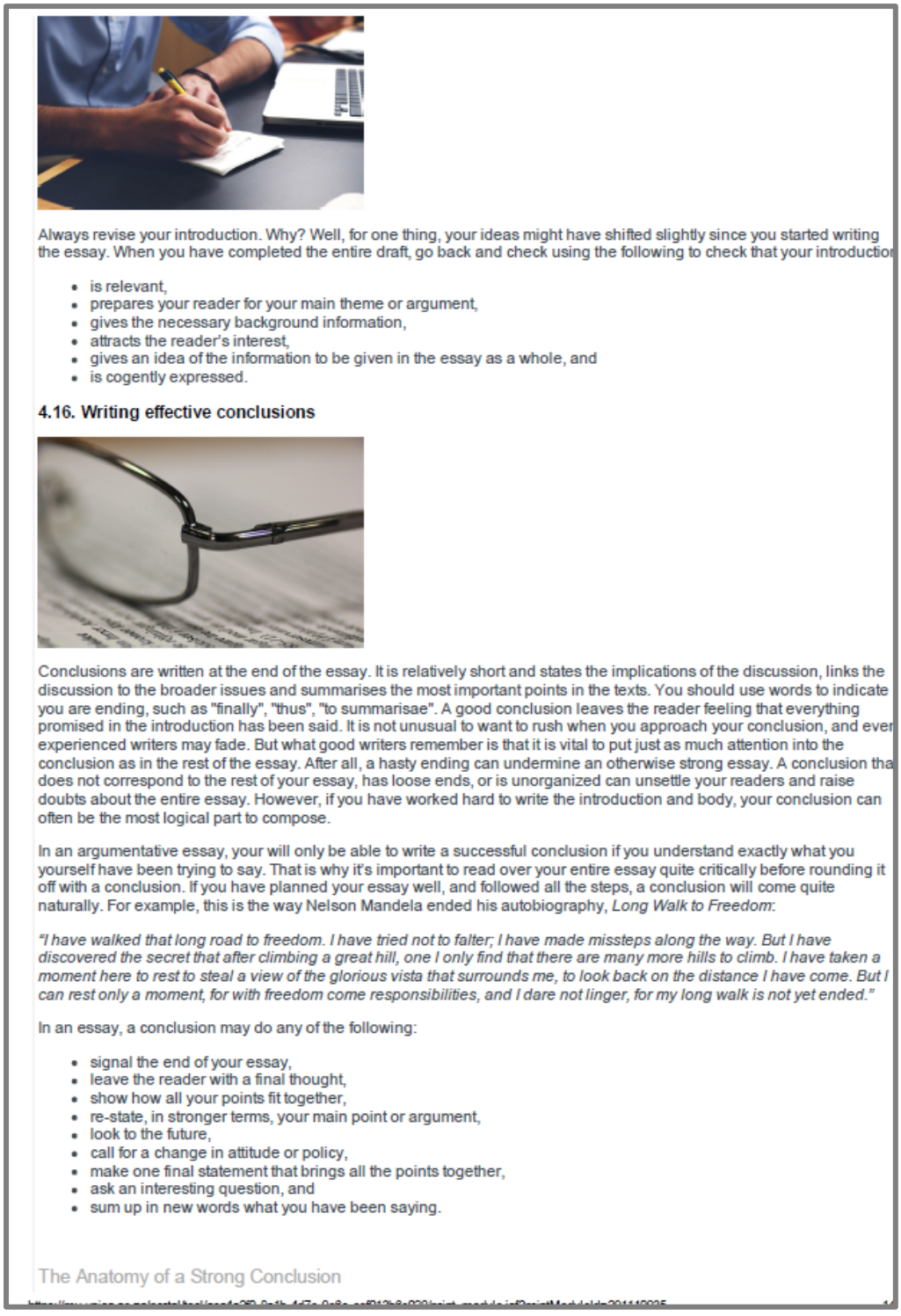


Figure 11: Handouts were integrated for students to download as resources.

Handouts were downloadable on the side of student. This prevented the cluttering of web-based text, also eliminating continuous reading and text-fatigue. Handouts and pictures elaborated in detail on the essence that was discussed. Images were integrated as it can easily take the place of writing at the centre of the communicational stage In addition, references and additional materials were designed and embedded to serve as resource to students. Considerations in the theory of multimodality focused on elements of linguistic meaning-making. These were enhanced through delivery and putting together a workable information structure for the student.



Always revise your introduction. Why? Well, for one thing, your ideas might have shifted slightly since you started writing the essay. When you have completed the entire draft, go back and check using the following to check that your introductio

- is relevant,
- prepares your reader for your main theme or argument,
- gives the necessary background information,
- attracts the reader's interest,
- gives an idea of the information to be given in the essay as a whole, and
- is cogently expressed.

4.16. Writing effective conclusions

Conclusions are written at the end of the essay. It is relatively short and states the implications of the discussion, links the discussion to the broader issues and summarises the most important points in the texts. You should use words to indicate you are ending, such as "finally", "thus", "to summarisae". A good conclusion leaves the reader feeling that everything promised in the introduction has been said. It is not unusual to want to rush when you approach your conclusion, and ever experienced writers may fade. But what good writers remember is that it is vital to put just as much attention into the conclusion as in the rest of the essay. After all, a hasty ending can undermine an otherwise strong essay. A conclusion tha does not correspond to the rest of your essay, has loose ends, or is unorganized can unsettle your readers and raise doubts about the entire essay. However, if you have worked hard to write the introduction and body, your conclusion can often be the most logical part to compose.

In an argumentative essay, your will only be able to write a successful conclusion if you understand exactly what you yourself have been trying to say. That is why it's important to read over your entire essay quite critically before rounding it off with a conclusion. If you have planned your essay well, and followed all the steps, a conclusion will come quite naturally. For example, this is the way Nelson Mandela ended his autobiography, *Long Walk to Freedom*:

"I have walked that long road to freedom. I have tried not to falter; I have made missteps along the way. But I have discovered the secret that after climbing a great hill, one I only find that there are many more hills to climb. I have taken a moment here to rest to steal a view of the glorious vista that surrounds me, to look back on the distance I have come. But I can rest only a moment, for with freedom come responsibilities, and I dare not linger, for my long walk is not yet ended."

In an essay, a conclusion may do any of the following:

- signal the end of your essay,
- leave the reader with a final thought,
- show how all your points fit together,
- re-state, in stronger terms, your main point or argument,
- look to the future,
- call for a change in attitude or policy,
- make one final statement that brings all the points together,
- ask an interesting question, and
- sum up in new words what you have been saying.

The Anatomy of a Strong Conclusion

Figure 12: Writing Effective Conclusions as part of the digital writing portal.

Students had to be guided through the structure of an essay and had to effectively return to the theme or themes in the introduction. Aligned to theories of CALL, this intervention seeks to employ computers to guide the students to improve their language-learning techniques. Condensed texts and visual representation allowed students to be also introduced to text variation (electronic vs physical texts) and guide the students through various stages in both technology as well as the pedagogical use of technology (Warschauer & Healey, 1998)

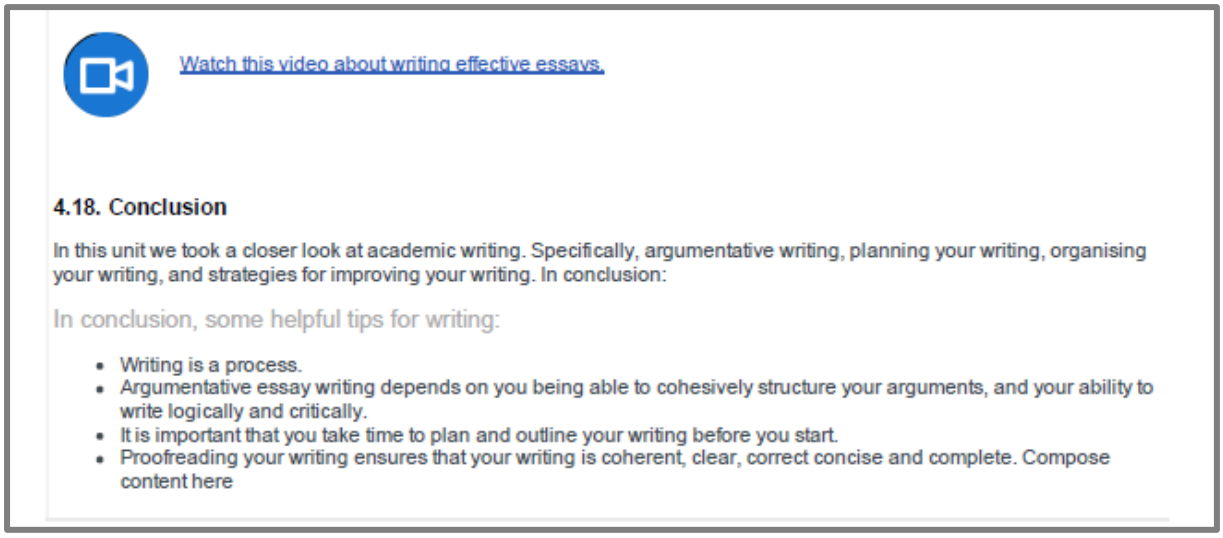


Figure 13: A revision video was embedded to capture the essence of essay writing.

Considering theories of CALL and Multimodality, videos can add a whole new dimension to visual and critical thinking practices when embedded in online portals Videos can also promote kinaesthetic awareness (e.g. Price & Rogers 2004; Sheridan, Price &. Pontual-Falcão, 2009).

3.6.5 EVALUATION PHASE

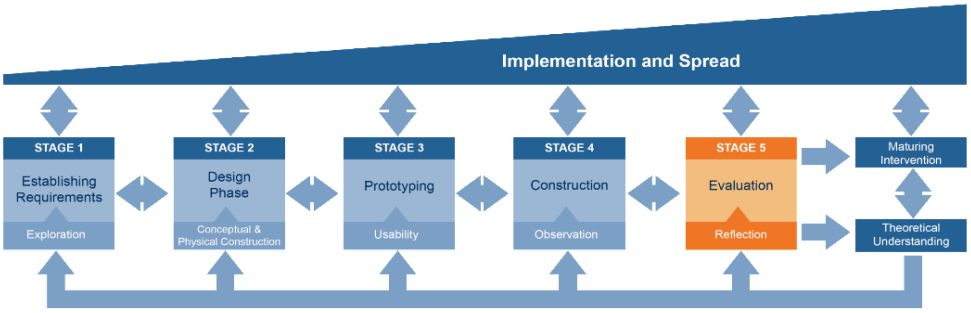


Figure 14: Evaluation parts of the EDR implementation and spread.

During the evaluation stage, observations were recorded in the forms of field notes. An observation guide was used to keep the observers focused on aspects of the learning ecology, such as student online participation, themes within discussion groups and strategies used for resolving questions. Each intervention was concluded with semi-structured interviews with randomly selected students. The questions concerned the openness of tasks, the group work, the topics dealt with, and the used approach to English. These interviews were audio-taped and transcribed. In this phase, the instructional materials, the observation reports and

the interviews were assessed on validity, practicability and efficiency (Nieveen, 1999). The validity of the materials was judged on its seamless crossover with the given curriculum, with students' cognition and affect, and with the institutional approval. The practicability of the materials was measured on whether it was readily useable, and that activities can be completed within a reasonable time frame. As for the efficiency, it was assumed that if the materials encouraged discussion and interaction by the student.

3.7 CONCLUSION

This chapter was initiated with a discussion around the research paradigm and alignment of multimodal resources within the design of this portal. Some of the conclusions drawn from the researcher after the evaluation phase include:

- Multimodality, especially considering a design-based approach does not automatically lead to a student-centered approach, especially when students who speak English as an additional language work through resources.
- The use of resources, in conjunction with the number of activities, may lead to an organised and student-centered learning environment.
- The resulting design conveyed an ecology in which the central role of the teacher as transmitter of knowledge was reduced, but where learning was able to take place. The researcher became a temporary outsider with regard to students' activities, as only asked to assist when needed, but yet an invaluable source of facilitation of learning.
- Participation with the digital writing portal was high and the mode of dialogue was very social. Additionally, the importance of social activities during the learning processes was stressed. Following the Design-Based Research Collective (2003), it is stated that the value of design-based research is to be found in its ability to improve educational practice. Through this methodology, it explored possibilities for creating new learning environments, as well as increase educational innovation.

Chapter Four aims to provide an overview to the research strategy and methodology in gaining student responses through naïve sketches and focus group interviews in this study.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The aim of this chapter is to discuss the research methodology and design employed in this research study. The methods used to collect data for analysis and interpretation of results and the rationale behind choosing the respective methodologies are explained. In addition, the chapter outlines the methods of data collection and the procedures for data analysis.

Generally, there are two types of methodologies namely quantitative and qualitative. Before stating which research methodology was selected, both methodologies will be explained, defined and differentiated

4.2 RESEARCH QUESTION AND AIMS

The purpose of this study is to develop and evaluate a web-based academic writing portal that can support the academic writing skills development of first-year students enrolled for the English for Academic Purposes (EAP) module.

The research question therefore is: *In what way can a web-based academic writing support programme support the writing skills development of first-year English for Academic Purposes (EAP) students at a distance learning institution?*

The following aims have been formulated to address the research question, namely to:

- develop a web-based academic writing portal, using open educational resources to provide structured and informed use of multimodal materials (videos, podcasts, screen casts, presentation slides, etc.) to support the academic writing development of first-years enrolled for the EAP module.
- evaluate the web-based writing support portal in terms of conceptual and physical design and the practical utility of such a portal

- understand the experiences of EAP students in using the web-based academic writing portal, and to
- provide suitable recommendations with regard to the computer assisted language learning practices to mediate academic writing skills development in a web-based learning environment.

4.3 RESEARCH METHODOLOGY

A research methodology can be branched into two broad categories, namely quantitative and qualitative methodology.

4.3.1 QUANTITATIVE RESEARCH METHODOLOGY

Punch (2014) defines qualitative methodology as an empirical research methodology where data is presented in the form of numbers. The author explains that measurement turns data into numbers, and the function is to draw necessary comparisons between variables at hand. In addition, measurement entails assigning numbers to variables, people, events and findings which create similarities and frequencies between data. Wimmer and Domink (2011) observe that quantitative research requires how often a variable under consideration is measured. This methodology indicates the amount of times a variable is present and uses numbers to communicate the amount. Data is used to describe or explain the social phenomena, determining the relationships between variables and look for the cause and effect (Wagner, Kawulich & Garner 2012).

4.3.2 QUALITATIVE RESEARCH METHODOLOGY

Wagner et al. (2012) and Punch (2014) define qualitative as research information collected through words; mainly used for exploring, describing, identifying and explaining a social phenomenon. Durand and Chantler (2014) observe that qualitative methodology seeks to understand people's behaviour or the meanings attached to these which they attribute to the social world. According to Creswell (2014), qualitative research takes place in naturalistic settings where participants

experience an issue or a problem under the study. Wagner et al. (2012) state one of the strengths of qualitative research is that there are richness and depth in explorations and the descriptions of the data. In this respect, the researcher is the instrument which has to collect, analyse and interpret the data (Creswell, 2014; Wagner et al., 2012).

Wimmer and Dominik (2011) list the advantages of using qualitative research methodology as follows:

- it allows the researcher to view behaviour in a natural setting
- it increases the researcher's depth of understanding of the phenomenon under investigation
- it is flexible and allows the researcher to pursue new areas of interest

This research study corresponds to criteria outlined in interpretive, qualitative research enquiry as a research methodology; and will be conducted within a 'natural' language learning setting i.e. a Writing Centre Laboratory.

The research was conducted through an exploratory and descriptive research strategy. This form of research method was selected to gain a broader understanding of how ODeL students feel about using multimodal resources particularly as an academic support strategy in an open and distance e-learning environment. Furthermore, the research further aimed to describe and understand students' experiences to the use of these multimodal materials to support their academic writing development.

- **Exploratory research:** Bless and Higson-Smith (1995) observes that the main purpose of the exploratory research is to increase knowledge in the situation, person or phenomenon. The aim of this study is to explore topics that are new or to which limited studies exist (Wagner, Kawulich & Garner, 2012).
- **Descriptive research:** According to Neuman (2011), descriptive research answers the questions about the audiences' classifications profiles and viewing habits by using either numbers or words that will describe the

findings. Wagner et al. (2012) views that descriptive research paints a picture of a social situation or relationship.

Bless and Higson-Smith (1995) state that the fundamental aspect of any research is the manner in which it deals with time. Research may all take place at a particular time or may be stretched over a period of time. In this research study the cross-sectional timeframe was implemented, as this provided the researcher the ability to collect data within days or weeks.

4.3.3 CROSS-SECTIONAL DESIGN

The aim of cross-sectional designs is to collect the same data from each member of a study sample at one particular point in time (Durand & Chantler, 2014). This means that the research will be conducted in a short period such as days or weeks (du Plooy, 2011).

Having outlined the research methodologies employed in this study the researcher now proceeds to state the research design chosen.

4.4 RESEARCH DESIGN

A research design is defined by Punch (2014) as relevant issues that involve the planning and execution of a research project – from identifying the problem to reporting and publishing the results. Punch adds that the research design is the basic plan for a piece of research, and includes four ideas:

- the first is the strategy
- the second is the conceptual framework
- the third is the question who and what will be studied?
- the fourth concern is the tools and procedures that will be used in collecting and analysing empirical materials

Bless and Higson Smith (1995) point out that a research design has two meanings. The first meaning can be understood as the planning of any scientific research from the first to the last step. This means that it serves as a programme to guide

the researcher in collecting, analysing and interpreting observed data. The second meaning relates to the testing hypothesis. It concerns the specification of the most adequate operations to be performed in order to test the hypothesis under given conditions.

In view of the Writing Centre praxis, it can be argued that any language learning environment should be able to emphasise creativity whilst "supporting [...] intellectual exploration of personal and group identity" (Nichols in Archer & Richards, 2011 p. 23). As part of this observation it is imperative that such an intervention should create "networks [to] support and give credence to new ideas and ways of being" (Nichols, 2011, p. 23) as a way to showcase that learning is always evolving.

This study will utilise an educational design research approach, which centrally focuses on the development and evaluation of the web-based intervention that can support and solve a real-world problem, and to which the presentation of resources can lead to enactment, analysis and redesign. This research study will consist of four stages.

4.5 THE FOUR STAGES OF THE RESEARCH STUDY

The aim of this section is to discuss the stages that were implemented in the research study. The following stages were implemented:

Stage 1: Establishing Requirements: In this phase, the researcher conducted a literature review to gain a better conceptual and contextual understanding of key concepts, and explore the views of practitioners, tutors and student experiences in the EAP module. In establishing the requirements, the researcher gained a better understanding of who the target users are, what kind of support is needed, and what level of support the product should provide.

Stage 2: Designing Activities: In designing activities, the researcher designed core activities and integrated suggested ideas for meeting the requirements as identified in Stage 1. In Stage 2, the researcher considered principles of conceptual

design and physical design. The conceptual design connotes the abstraction to what students can do with the product, and what training and content are needed for them to understand and interact with the portal. The physical design includes the choice of multimodal resources, images, technical media and audio-visual. Activities were constructively aligned to modular outcomes.

Stage 3: Prototyping: The researcher developed the site, integrating key areas that can lead to a prototype (intervention), to which a tentative product will occur based on tentative design principles and product approach. Students interacted with it to explore its suitability. The researcher was able to explore which areas should be emphasised and which de-emphasised. Activities were assigned through video simulation of a task. Activities were to be facilitator-driven for the researcher to determine the usability of the portal for identifying market requirements.

Stage 4: Evaluation: The evaluation was centred on the usability and acceptability of the design, including its strengths and areas for development. Critique would be used to either complement or enhance the quality of the prototype. Focus Group interviews with EAP students will then be conducted, using semi-structured interviews in English, complemented by a literature control to re-contextualise findings and to better the design. It should be pertinently stated that for this study, only one cycle of the educational design-based research was tested.

The focus group will be discussed in more detail in the next paragraph.

4.6 FOCUS GROUP

Durand and Chantler (2014) define focus groups as an interview method that consists of a number of people, usually eight to twelve participants, that are brought together to discuss a topic with one or two facilitators who introduce and guide the discussion and record it in some way.

According to Morgan (1997), the main advantage of using focus groups in compared to participant observation is the opportunity to observe a large number

of interactions on a topic in a limited period of time based on the researcher's ability to assemble and direct the focus group sessions. Bless and Higson-Smith (1995) note that the focus group enables the members of a group to share their experiences and try to reach some kind if consensus about the topic of the research. Using focus groups as reference, participants are able to build from one another's ideas and comments to provide an in-depth view of the topic discussed (Wagner et al., 2012). Furthermore, the authors elaborate further that unexpected comments and new perspectives can be explored easily within the focus group and can add value to the study. Krueger and Casey (2009) observe that focus groups work when participants feel comfortable, respected and free to give their opinion without being judged. Therefore, the main aim of the focus group is to promote self-disclosure among participants so that they can feel comfortable in the group.

In this focus group, I targeted a group of 30 students who have engaged with the digital writing portal. The aim was to elicit and gather information about their perceptions, ideas and experiences in using this digital writing portal for academic purposes. With the focus on open and distance e-learning and academic writing development, the researcher wanted to understand their experiences relating to digital technology to encourage social and cognitive engagement in relation to their experiences in writing for academic purposes.

In their critical view, Wimmer and Dominick (2011) caution and indicate that it is crucial to select more than one group. Selecting more than one group was essential as the researcher wanted to compare responses to determine whether there were any comparisons or distinct variances in the perceptions of students. The data were collected through four focus group interviews. A dedicated time roster was provided to students to accommodate especially those ODeL students who are employed full-time. In this case the focus groups allowed participants to interact and influence each as the conversations unfolded. In addition, it provided a space which encouraged discussion and consideration of ideas and perspectives.

In the preparation of the focus group it was imperative that the researcher consider the planning of the focus group (Kreuger & Casey, 2009; Morgan, 1997). The following aspects of the planning were implemented:

4.6.1 DETERMINING THE FOCUS GROUP

It is imperative that the researcher selects people that will be beneficial to the focus group. Planning is figuring out what kind of people can provide information you want, for instance “information-rich” (Morgan, 1997, p. 21). This means that the researcher has to determine who has the greatest amount of insight into the topic.

4.6.2 DETERMINE THE NUMBER OF GROUPS

Here, the researcher had to decide whether the participants had a lower level of participation, this may lead to difficulty in maintaining active participation. In this study, based on student availability four focus groups were conducted.

4.6.3 DETERMINE THE NUMBER OF GROUPS

The guideline in selecting groups should be three to four claims that groups explore and provide new meaningful insights to (Morgan, 1997). This provides the researcher with the capacity to analyse these themes across groups. In other words, it compares and contrasts how certain types of people talk about a topic; therefore, these people must be separated into various groups to align or contrast the respective narratives (Kreuger & Casey, 2009).

4.6.4 CONDUCT AND ANALYSE THE FOCUS GROUP

During this stage the researcher will conduct the focus group, and this is where the data will be produced.

4.6.5 DETERMINE THE INTERVIEW CONTENT

Morgan (1997) advises that set the length time for ninety minutes, but to tell the participants that the discussion will be held for two hours which allows for half-hour cushions to avoid the disruptions of the group dynamics from “late-comers” to “early leavers” (p. 47). A time frame of 90-120 minutes was needed for focus group discussions. Focus groups were conducted during a time of convenience. In

addition, it is crucial that the participants maintain the focus and not stray to other irrelevant topics. For more structured groups, it was useful to organise discussion topics as this allowed the researcher or moderator in guiding the topics systematically.

4.6.6 MODERATING THE GROUP

Here, the researcher will introduce the topic of the research study accompanied by a few ground rules. Furthermore, the researcher kept the introduction and instructions as brief as possible. Kreuger and Casey (2009) observe that the first few minutes in a focus group discussion are critical, as the researcher must provide enough information to make people as comfortable with the topic, create a permissive atmosphere, provide the ground rules and set the tone of the discussion.

4.6.7 BEGINNING THE DISCUSSIONS

To begin the discussion, the researcher used an ice breaker in the form of naïve sketches to set the mood of the group. This ice breaker afforded an opportunity for each participant to provide a brief introduction about themselves and their use of educational technology for the very first time. Morgan (1997) advises that it is appropriate to begin with a general question to enable the participants to share their interests and to hear their perspectives toward a specific topic. This also provides the researcher new insights from participant viewpoints as opposed to the researcher's manifesting the interests.

4.6.8 CONTINUING AND CONCLUDING THE DISCUSSION

Continuing the discussions can be unpredictable. The discussion might flow precisely as planned or it might take leaps or detours (Kreuger & Casey, 2009). It is imperative to anticipate the various directions the discussion might take and recognise beneficial topics of discussion as opposed to dead ends. Here, the researcher briefly summarised the main points and asked whether the summary

reflected what was heard in the group. The researcher gauge through observation whether the participants agreed, were hesitant or confused, and whether the participants wanted to add a final view on the topic. At the end of the procedure the researcher thanked the group for their participation.

It is through the evaluation stage that the researcher will focus on the engagement and reflections of participants' sessions through interacting with the web-based digital writing portal. The data produced in this study is socially situated and focused primarily on participants' engagement and experiences with multimodal resources used.

The following are some considerations that the researcher will attend to during this stage:

- **Credibility:** The researcher aims to understand experiences from participant perspectives using these resources on a web-based digital writing portal. Focus group discussions will be used for the purpose of exploring aspects of the inquiry.
- **Dependability:** The context and engagement with digital writing portal and its changes will be taken into consideration. To secure dependability, the processes to which reflections through field notes will be kept to ensure credibility and validity of the data obtained.
- **Conformability:** the researcher will be checking and rechecking the data throughout the research study, cross-checking with methodological notes, and also observe student experiences through field notes. This will link to the Halpern audit trail categories, i.e. on raw data, data reduction and analysis products, data reconstructions and the structure of connections to the existing literature and an integration of concepts, relationships and interpretations. Furthermore, field notes and materials relating to intentions and dispositions will ensure conformability.
- **Transferability:** transferability will be enhanced by describing the research context, aligning findings to the theoretical frameworks of Language Learning theories and the assumptions that were central to the research. The researcher will transfer the results to the context after open coding is

done. The determination of trustworthiness focuses on the techniques of credibility.

- **Authenticity:** This will focus on the entire criterion stated above, also considering field notes and reflective and reporting information. The researcher was mindful of fabrication and plagiarism

Focus groups are able to yield a large amount of data that is suitable for a case study (Rule & John, 2011). In order to achieve this research's objective, the researcher chose a case study as an appropriate research design.

4.7 CASE STUDY

A case study can be defined as a design of inquiry found in many fields, especially evaluation, in which the researcher develops an in-depth analysis of a case, often a programme, event, activity, process, or one or more individuals (Creswell, 2014). Wimmer and Dominik (2011 indicate that the use of case studies is most valuable when a researcher wants to obtain a wealth of information about the research topic. Furthermore, case studies allow the researcher to deal with a wide spectrum of evidence.

According to Punch (2014) there are four characteristics that define a case study:

- The case is a bounded system, and it has boundaries. Here the researcher has to identify and describe the boundaries of the case as clearly as possible.
- The case is a case of a problem or issue at hand. This this means to give focus on research and to make the logic and strategy clear.
- A case study also entails the explicit attempt to preserve the wholeness, unity and integrity of the case.
- Multiple sources of the data and multiple data collection methods are very likely to be used in a naturalistic setting.

There are many criticisms against the case study research design. Punch (2014) points out that the most common criticism is that the case study concerns

generalisability. In addressing the issue of generalisability (Punch 2014) notes that the case maybe so important, interesting or even misunderstood that it describes the study in its own right. Furthermore, a case study seeks to generalise, and claim to be representative; it depends mostly on the context, purposes of the particular project.

Punch (2014), notes that there are two ways in which case studies can be generalised. These two ways are through conceptualisation and preparing dispositions. To conceptualise means that on the basis of the disciplined study of a case and employing methods to analyse data that focuses on the conceptualising rather than describing. In addition, the researcher uses more than one or more new concepts to explain some sort of aspect that is being studied. In order to develop propositions, based on the case being studied, the researcher puts forth one or more prepositions that can be called hypotheses about concepts or elements or factors within the case. Moreover, these can be assessed for their “applicability and transferability to other situations” (Punch, 2014, p.123).

Wimmer and Dominik (2011) address the advantages of case studies, including that,

- they provide tremendous detail, and
- allows the researcher the ability to deal with a wide spectrum of evidence

In the case of this study, the overall objective was to complement the qualitative nature of this research study. Case studies are viewed as an important source of research data. In a study conducted by Yin (2009), Yin asserts that it has an often-distinct boundary line that exists between the phenomenon and its context. Hence, so it is important to look at a phenomenon of a case within context, where rich description lies (Cohen, Manion & Morrison, 2011).

This case study focused on the engagement of a group of learners making use of multimodal resources, using a digital writing portal, within an open and distance e-learning context. For this study, the focus was on how students engaged with these resources within a set semester. Their engagement was aligned to theories taken from connectivism and multimodality.

The intention of this case study was to source, develop and trial the use of suitable materials and resources to support student learning in a broad range of writing literacy practices. The case study afforded a space for a multifaceted understanding on how students use resources in their discipline, but particularly for EAP.

Based on the advantages of the case studies, this research study has employed the case study to provide in-depth information to investigate students' experiences in using digital writing portal.

4.8 SAMPLING

This study made use of the purposive sampling method, during which a group of 30 students were identified. In the interview stage, focus group interviews were conducted with 27 students. All 27 students came to the dedicated time allocated. As interviews unfolded, a point of saturation (Bowen, 2008) was reached. The concept of data saturation formed part of the naturalistic enquiry where the data set is complete as indicated by data replication or redundancy.

In this research study, a non-probability sample was employed to select participants based on appearance or convenience, or because they seem to meet certain requirements that qualify themes for the study (Wimmer & Dominik, 2011). Therefore, purposive sampling was conducted for the selection of participants.

4.8.1 PURPOSIVE SAMPLING

This type of sampling involves the researcher's own experience, previous research or ingenuity to find participants in such a manner that they can be considered as representative of the population, and it usually uses specific criteria to identify the most suitable participants (Wagner, Kawulich, & Garner, 2012). This provides the researcher the opportunity to deliberately select participants based on their characteristics of interests (Durand & Chantler, 2014).

The reason why purposive sampling was selected as a sampling method was that the sample the researcher wanted to select was small, and participants held characteristics of the population that were of interest to the researcher. In addition, they were best able you to answer the research questions related to the research aims and objectives.

4.9 POPULATION

According to Bless and Higson-Smith (199585) population is described as a set of objects and events or a group of people which are the object of the research, and for which the researcher wants to determine similar characteristics relevant to the researcher's study.

4.9.1 TARGET POPULATION

The target population is referred to as the elements that the researcher wishes to conduct the research upon. Du Plooy (2011) points out that it is comprised of the entire class or group of units, objects or subjects to which the researcher want to generalise findings upon. Therefore, the target population in this study was all those students who were reachable (students that visit the decentralised campus of an ODeL institution) to conduct the research. The target population consisted of 1902 students in 2015, and after extensive marketing, only 990 (52.05%) made use of the regionally-based services through workshops and the digital writing portal.

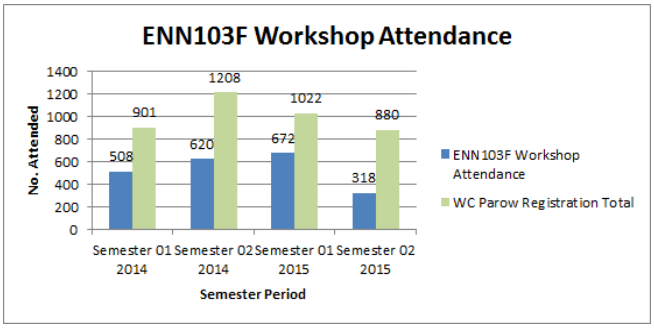


Figure 15: Writing Centre attendance during the year 2015.

4.9.2ACCESSIBLE POPULATION

The accessible population are all those people that are accessible for the researcher to conduct the research. Du Plooy (2009) explains that the accessible population consists of the target population, which is reachable for the researcher to gain access to. The accessible population refers to the students that attend Unisa (Cape Town) and who use digital writing portal for academic purposes. These are the students that the researcher had access to whose willingness to participate could be established. A total number of 990 students made use of the services offered by the Western Cape Writing Centre in 2015. During this 2015, 52% of the students who attended writing workshops made use of the digital writing portal.

4.9.3 UNIT OF ANALYSIS

Bless and Higson-Smith (1995) define the unit of analysis as a person or object from whom the researcher collects data. The authors further elaborate that data from such a unit can only describe that unit, but when combined with similar data collected from a group of similar units, provides an accurate picture of the group to which that unit belongs. In this study, the units of analysis are those participants (students of Unisa) who had similar characteristics of gender (male and female), age (18-55 years), ethnicity and employment statuses. The units of analysis were based at the Unisa (Cape Town) campus this will enable the researcher to gain access to the participants. In addition, individuals who are familiar with the digital writing portal will be selected as the researcher will be able to collect their experiences, attitudes and views through the focus group interview. The next section will discuss the data analysis procedure.

4.10 DATA ANALYSIS

The research analysis procedure followed the qualitative content analysis steps as outlined by Tesch (1990).

Step 1: In this step, the researcher read the entire transcript carefully in order to attain a sense of the whole, and jotted some ideas about the data that came to mind.

Step 2: The researcher selected a document (transcript or field notes), preferably the most interesting one or the shortest on top of the pile. Here, the researcher paid careful attention to the content and what it pertained to. In addition, the researcher had to think about the underlying meaning of it all. The researcher's thoughts were written in the margin.

Step 3: When the researcher has completed these steps of interviewing several participants, a list of all the themes are clustered together (See Appendix E). These themes were formed into columns, that were arrayed from major, unique and leftovers.

Step 4: The researcher made a list and went back to the data. The topics were abbreviated as codes and the codes are written next to the appropriate segments of the text. The researcher tried out this preliminary organising scheme to see whether new categories and codes emerge.

Step 5: The researcher had to find the most descriptive wording for the topics and turned these into categories. Here, the researcher looked for ways to reduce the total list of categories by grouping topics together that relate to one another. Lines were drawn between categories to show the relationships.

Step 6: The researcher made a final decision on the abbreviation for each category name and grouped these codes.

Step 7: The data material belonging to each category is assembled, and a preliminary analysis is performed.

Step 8: The researcher recodes existing data if necessary.

4.11 ETHICAL CONSIDERATIONS

As indicated in Section 1.11 of this study, the researcher adhered to the principles and conditions reflected as per the Belmont report and Singapore Statement, namely respect for persons, beneficence, non-maleficence and justice (Amdur & Bankert, 2011).

- After Ethical Clearance documents have been obtained, research participants were approached to determine their interest in partaking in this research project. If they were interested, they would complete a consent form.
- The participants were briefed on the research from the onset and were granted time to make an informed decision as to whether they wish to be participants in the research project.
- Copies of the relevant information sheets and consent form were provided for perusal. Participants were able to withdraw at any time, or omit key areas they felt were infringing their subjective rights (e.g. their activity on platforms).
- In addition, aligned to the withdrawal clause in the consent form, it was be explained to participants that their participation was anonymous and voluntary, and that all forms of information will be treated as confidential. Their confidentiality was protected by not revealing their identities in any reporting resulting from the research.
- All identifying information were taken from the audio-recorded information and anonymised.
- Furthermore, research participants will be assured that electronic support will always be available to afford any additional clarification or explanation if needed.
- Aside from the engagement with resources the researcher ensured that appropriate precautions to protect the confidentiality of participants' data and that identities and locations were removed.

- All identifiable information will be confined to the primary researcher involved.
- Data will be stored for 5 years after the finalisation of project.
- Only the researcher had access to the data. As per signed agreement with the transcriber, upon handover of the electronic files, the transcriber will permanently shred all hardcopies and permanently delete all computer files relating to the study. The transcriptions of the interviews will be locked away in a secured cupboard, and all computer records will be password protected. All reasonable care will be taken to ensure that no-one gains access to the transcriptions.

In focus group discussions, inconvenience might have been incurred relating to emotional discomfort as part of the reflection process. As this study entailed focus group discussions, absolute guarantees that information shared will be treated as fully confidential could not be guaranteed in the broader sense considering participants' participation in a group. However, as the researcher is bound to the Ethics of Research document by both Stellenbosch University and the University of South Africa, all steps to ensure confidentiality were taken.

4.12 CHAPTER SUMMARY

The aim of this chapter was to discuss the research design and methodology for this study. Both the qualitative and quantitative research methodologies were defined and the choice (qualitative) was explained. It was also explained that the research will be conducted through explorative and descriptive research in order to understand students' experiences, perceptions and attitudes. The stages of the research and how it would be implemented were. The research design was employed through a case study. It was pointed out that focus groups are suitable to yield a large amount of data that is most suitable for a case study. The aim of the focus group is to analyse the participations verbal and non-verbal behaviour towards the discussion taking place. A purposive sampling method was employed in the selection of participants that would be knowledgeable about the topic.

The next chapter will discuss the research findings of this study.

CHAPTER 5: DATA ANALYSIS AND RESULTS

5.1 INTRODUCTION

This chapter presents and discusses findings as derived from responses of the attendants of the web-based digital writing course based on naïve sketches and four focus group interviews. As indicated in preceding chapters, the latter two instruments were used as qualitative data collection. The target population consisted of 1902 students in the Western Cape in 2015, and after extensive marketing, only 990 (52.05%) made use of the regionally-based services through workshops and the digital writing portal. Of these at total of 47 students became regular attendees of sessions hosted in the Writing Centre Laboratory using the digital writing portal on a weekly basis.

Although 30 students were targeted during the data collection processes, only 27 (90%) students were available for scheduled interviews; thus, the results presented in this chapter are based on 27 responses. The inclusion criteria used considered the year of enrolment at university, exposure of interest, geographical location, and valid enrolment for the EAP module. Only students who were based in the Western Cape region who regularly made use of the digital writing portal, and who were well-acquainted with the support services offered by the Writing Centre were included. Exclusion criteria mainly related to setting (where the students were based). In addition, there were no experimental or control group.

This chapter is concerned with the presentation and analysis of findings and is divided into the five distinct themes which emerged, namely:

- implementation of the digital writing portal
- student experiences on the digital writing portal as part of their studies
- multimodal resources

- writing skills
- the digital writing course overall.

5.2 DATA PRESENTATION AND ANALYSIS

In earlier chapters, the concepts of multimodality and computer assisted language learning were explained, including that it can “exhibit different learning strategies” (Echevarria, Vogt & Short, 2008) in supporting these first-year students with English academic writing. The main goal of my study was to develop and evaluate a digital writing portal and the ways in which the academic writing skills development of first-year students enrolled for the English for Academic Purposes (EAP) course can be supported. For the purpose of this study, the following were the objectives that were formulated to support the aim of the research, namely to:

- develop a web-based academic writing portal, using open educational resources to provide structured and informed use of multimodal materials to support the academic writing development of first-year students enrolled for EAP
- evaluate the web-based writing support portal in terms of conceptual and physical design and the practical utility of such a portal
- understand the experiences of EAP students in using the web-based academic writing portal, and to
- provide suitable recommendations with regard to the computer assisted language learning practices to mediate academic writing and skills development.

5.3 PROFILE OF THE RESPONDENTS

All 27 students who were interviewed in four focus group sessions, were part of a digital writing portal as part of tutelage in the EAP module. As indicated by Archer (2017) multimodal pedagogies “encourage the use of a range of modes (such as talk, writing, music and images) and a range of resources (including multilingual, experiential, embodied and technology-enriched resources)” (p. 1). Four focus group interviews were arranged which were between 45-90 minutes in length.

During this course, the computer became the tool whereas the facilitator acted as support practitioner, to make the learning process easier to understand while engaging with the course content and the actual activity of facilitation.

5.4 IMPLEMENTATION OF THE DIGITAL WRITING PORTAL

5.4.1 INTRODUCING THE DIGITAL WRITING PORTAL

Students were introduced to the programme during the registration period where the representative of the workshop discussed what this programme entailed, and how this programme can assist students in improving their academic outcomes through technologies. During the induction workshop, writing tutors handed information brochures about the programme to students. Flyers and pamphlets were found at the Learning Centres, Computer Laboratories, Administration and Registration desks and through pin-up posters on the wall. In addition, SMS notifications were forwarded to students with postings via Twitter and Facebook.

Most respondents indicated that they were informed about the programme from fellow students, facilitator, the writing lab website, SMS notifications, induction workshops, advertisements on notice boards and social media (WhatsApp, Facebook & Twitter). As one student indicated that she heard about the programmes through an e-consultation with the facilitator and he informed her that the programme was an innovative way to improve students' writing skills through technology, especially for assignments. This advertising campaign provided marketing materials such as posters, pamphlets to promote students to the benefits of this programme so it can assist them not only academically, but as well as professionally. Twitter, Facebook, Blogger and WhatsApp formed the basis of the social media campaign run by the Writing Centre. These initiatives were started to ensure that students are informed of activities taking place on campus, as well as to promote interaction and communication with students.

In general, students' opinions of working with the web-based digital portal were positive. Many indicated that using technology as part of this study has enhanced their learning experiences in understanding educational outcomes captured in

assignments and examination more clearly. It also brought along greater understanding to the academic writing process. Based on responses received, technology provided learners opportunities to step out of their comfort zone and foray into academic ambits differently, and more effectively.

Although many indicated that they were initially quite nervous about working on digital platform the facilitator (with the help of peer leaders) assured that using technology would assist in gaining a better understanding of reading and writing activities, nurture scholastic understanding and assist them in developing an academic voice within their respective field(s) of study. Technology also provided students with social interaction, collaboration, peer feedback and group projects which have improved the approach in which students vary their learning strategies based on the tasks received.

The initial reaction, especially after the induction session, was positive. Students indicated that they were well-informed about the digital writing portal after the induction workshop including the use of open resources and using the portal to mediate their learning process. The representatives of the programme were well-spoken and friendly, and students felt that this programme wanted students to succeed academically. Representatives spoke to the students about the potential that technology presented as a new communication medium to facilitate contact between facilitators and students and to enhance practice- and skills-based opportunities whilst breaking the sense of isolation. In addition, it also afforded distance learners the ability to sustain their academic motivation. Workshops inspired students to attend the technology-based programmes and use it as part of their academic and professional development.

Facilitators provided the students with better alternatives by using electronic resources in which students were able to explore their creativity and enhance their social skills to foster a constructive learning environment through peer collaboration and learner motivation.

In the focus group interviews, students indicated that the most enjoyable part for them was to engage with the facilitator, collaborating and engaging with other

students, as well as working on assignments and improving their digital literacy skills. As distance learners, some students feel lost and isolated, not knowing their lecturers on a personal level, nor knowing students enrolled for the same modules. This programme provided a discussion forum for students to raise their concerns and interact with each other.

It was difficult to understand the content of the module given that it is practice and skills-based module as opposed to it being a study subject. Immersion into the programme created a more intimate and welcoming atmosphere and it allowed students to settle in and become comfortable in their learning space.

5.4.2 LEARNING ACTIVITIES ON THE DIGITAL WRITING PORTAL

Learning activities were well-structured, relevant to assignment tasks and previous examination papers. The programme also created an environment that encouraged students to share their writing experiences and develop their self-belief about academic reading and writing. Furthermore, this programme created a space for peer-to-peer interaction in their support structure, since students were invited to communicate with other students. Through this programme, learners were able to share their experiences with one another, and also take ownership for their own learning. In addition, learners participated in small group activities where they were able to work together and developed social and team skills through the give-and-take of consensus building. Students involved in group work, group projects and collaborative learning were encouraged to utilise peer feedback since it enables them to learn from other students and the facilitator. Peer learning was encouraged as a space for meaningful learning which involves students teaching and learning from each other. In addition, the principles of peer learning mediated spaces in technology-enhanced learning environments to support discussion, communication and articulation of ideas to the online learning environment.

5.4.3 LEARNING THROUGH SOCIAL MEDIA

The facilitator encouraged students to interact with one another through the platform and to follow current events on portals using web-based calendars, and social media network applications such as, WhatsApp and Twitter. The Facebook page was used to share information as way to elicit student interest and participation in online discussions and events that were interested to the students. It was mainly used to create an online community for students using the web-portal and to encourage student participation. The WhatsApp application allowed students to communicate with the facilitator on weekly programmes dates and times.

5.4.4 TRADITIONAL VS ONLINE APPROACHES TO LEARNING

In the past students submitted handwritten assignments via assignment boxes. The web-based portal required students to do intensive research at the library to gain knowledge from as many online sources as possible. Students indicated they were grateful for the support provided by the facilitator and their peers for assisting and supporting them with their academic writing. Afterwards they were also able to search independently for accredited research articles, and reserve books through the internet and digital devices.

5.4.5 MULTIMODAL RESOURCES IN THE ACADEMIC AMBIT

The online texts, videos and sound clips were designed and curated to offer students the ability to work through a set of curated material to assist them with the general academic reading and writing. The video clips presented writing skills, document and essay formatting as well as the basics of converting documents to different formats required for assignment submission online. Online texts were shared through the digital writing portal's discussion forum allowed for a two-way interaction where student queries were resolved quickly and information

disseminated immediately. These online resources aided students in developing critical thinking skills and improving confidence in their reading and writing abilities, as well as assisting them in navigating the requirements of completing assignments and acquiring knowledge to successfully progress in their formal assessments.

5.5 STUDENT EXPERIENCES ON THE DIGITAL WRITING PORTAL AS PART OF THEIR STUDIES

5.5.1 OVERALL EXPERIENCE

All 27 respondents indicated that their student experiences pertaining to the digital writing portal were highly positive. This was particularly evident where the non-mother-tongue speakers of English to whom engagement and support were regarded as crucial during the essay writing processes, were asked their opinion.

Twenty-three of the students indicated that the most enjoyable part of using the portal was to engage, collaborate and connecting with other students. They also indicated that they now have access to online resources, communicating with the facilitator and engaging in reading and writing exercises. For respondent 4, the writing portal activities were convenient to understand and discuss with other students. He further elaborated that they were able to work through the sites and enjoyed watching the videos. Respondent 8 stated that her most enjoyable part was the developing stronger writing and reading skills through technologies. Students complimented the facilitator that created a friendly learning environment, and his patience and understanding of what each student needed. Respondent 18 agreed that the facilitator made him feel comfortable and was always nice and giving to the students. Moreover, he was very professional in what he was doing and knowledgeable about the programme.

Nine of the respondents (1, 2, 4, 9, 10, 16, 18, 20, 23 & 24) indicated that they did not enjoy reading documents electronically and downloading online resources. In addition, the language barrier was also a major challenge for students. There were students that found it difficult to read electronically as it was a major adjustment for them due to a lack of computer skills (e.g. basic mouse and keyboard skills). In addition, at the Writing Centre, there were no printing facilities. The language barrier was also another

factor for students who had to switch from Afrikaans, isiXhosa, isiZulu, Sesotho and French to English. These students overall lacked confidence in their reading abilities to assimilate information for their understanding. Although the respondents' overall experiences were very positive, students have to practice self-learning in ODeL which some students find very intimidating. Through this programme, students acquired skills on how to effectively work in groups and how to work independently. This programme taught students the importance of writing, and that writing is a reflection of their thoughts, ideas and voice. Students have gained a better understanding of the module, and the requirements for completing assignments and in working towards examinations. The respondents also felt positive towards the facilitator and the workshops were very engaging because of the level of comfort that students experienced with the facilitator, to openly discuss and ask questions relating to difficulties and problem areas. As student 27 stated that the "experience was positive. It built my confidence, learning abilities and experience at university". Respondent 26 concurred that the programme was positive as it enhances student learning experience and knowledge using technologies. I can honestly say it was a stimulating experience".

5.5.2 DIGITAL LITERACY SKILLS OF STUDENTS AND SUPPORT

Although students overall had a positive response, some were not confident with their digital literacy skills. Others, however, were excited about using technologies to enhance their learning and educational abilities. The aim of this programme was to provide support to students with their writing skills through the use of a digital web-based writing portal.

Most of the students expressed a sense of relief knowing there were assistance and that they part of a programme that is willing to assist students regardless of their levels of literacy (reading, writing and computer) skills. Respondent 2 expressed his reaction that he felt relieved and happy that he was part of a learning community with other students experiencing the same fears and objections that he had struggled with studying at a distance learning institution. Respondent 17 agreed that she felt positive and eager to be able to use technologies that enable her to connect to a learning

community which enhances student participation. Respondent 9 added that it was innovative way to promote and sustain new knowledge through computer-based learning and building connection with his peers.

There were students that indicated that they were fearful, yet very excited at the prospect of an alternative way of learning opposing to the workshop method. As Respondent 20 stated that his reaction was both optimistic and intimidating. “Optimistic because I needed a new method of learning as the old method was not working for me and, intimidating because I didn’t know what to expect when doing the programme. However, the facilitator was patient, knowledgeable and understanding and eased us through the programme.” Respondent 18 also stated that he was frightened because he was not good with technology. He agreed with respondent 20 that the facilitator was warm and inviting and that they learn from one another through discussions that share similar interests and aims. It was apparent students were nervous about engaging with the programme at first, however as the sessions progressed students felt more confident in their reading, writing and digital abilities.

5.5.3 USING TECHNOLOGY AS PART OF THEIR STUDIES

During the interview sessions students expressed a diversity of opinions for using technologies has part of their studies. For some participants (1, 3, 5, 7, 9, 11, 22, 23 & 27) they felt that using technologies as part of their studies was a convenient way to access resources and study material, upload and work through assignments on the myUnisa portal, communicating with peers, receiving feedback from other students and facilitator, record information sessions and share it via social media to other students that were not able to attend.

There were also certain students (2, 4, 12, 13, 15, 20, 21, 24 & 26) who expressed their reservations about using technology as part of their studies such as using technology is not always available at home as there are no computers available. It was also noted that students (6, 8, 10, 12, 14, 16, 17, 18, 19, 23, 25 & 27) might feel threatened by using technology as they felt using technologies were not user-friendly or were not computer literate and executing tasks such as typing assignments, downloading resources and study materials cause them to be frustrated by using

technologies as they do not come from a digitally-rich background and feel that they are not digital adequate. Various students hailing from small villages and places where languages other than English were spoken were equally sceptical about studying through any digital form of tuition support. Human agency was seen as crucial especially as peer groups started to emerge during the course, with the result that they also formed groups on social media platforms (especially WhatsApp and Facebook). Connection started to flourish among classmates, and peer sessions (separate from tuition time) started to develop.

What can be denoted that the usefulness of information and communication technologies (ICTs) have become a supplementary method to enhance learning for students to engage in group work, group projects and collaborative learning. By initiating technologies through learning, students and facilitators started to build a learning community of practice which made it possible for students to connect with other students to enhance peer support. In addition, it provided students with an active relationship with each other, allowing them to engage with the information they had to work through.

Poellhuber, Chomienne and Karsenti (2008) claim that the communication potential of ICTs should not be underestimated and that new forms of communication media are able to facilitate contact between tutors and students and among students, breaking the sense of isolation experienced by some distance Students and helping to sustain their motivation.

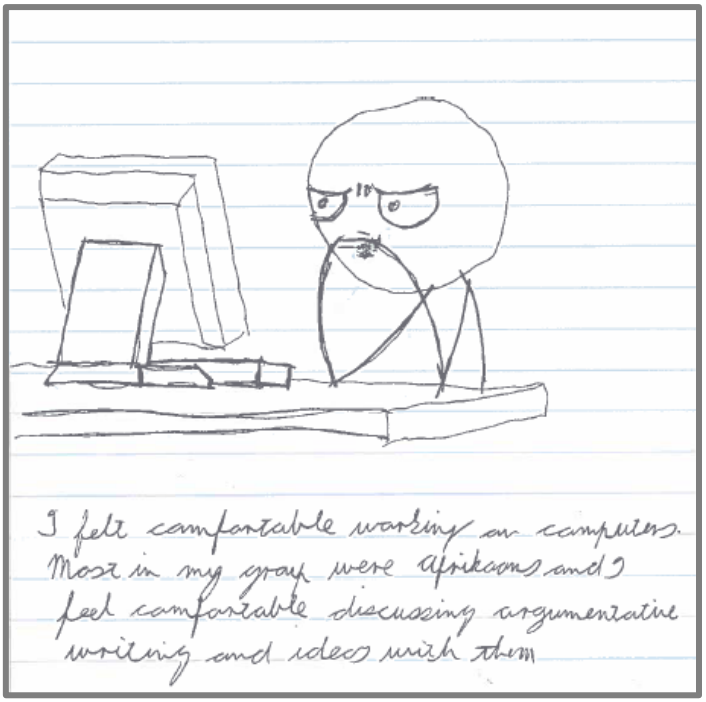


Figure 16: Naïve sketch of student's engagement using computers relating to argumentative writing.

Beldarrain (2007) agrees that students, especially in ODeL settings want to stay connected with peers and receive instant feedback from their peers and facilitators. Beldarrain further contends that students prefer working collaboratively in a group rather than in isolation. According to Livingstone (2011), ICT-mediated formal educational and information resources can also be used for instant messaging, online discussions and social networking to foster a constructive learning practice which enhances peer collaboration and learner motivation.

Keppell, Adu, Ma and Chan (2007) view peer learning as a useful method to encourage meaningful learning that involves students teaching one another as well as learning from one another. Furthermore, the purpose of collaborative learning is to share ideas, knowledge and experiences and emphasises interdependent as opposed to independent learning (Resta & Laferriere, 2007)

Keppell et al. (2007) explain that online collaborative learning is a learning process where two or more people work together to create meaning, explore a topic or improve skills. According to Resta and Laferrière (2007), collaborative learning involves mutual engagement of peers in a coordinated effort to solve a problem

together. Students solve problems presented in context by role-playing and interacting with both the content and the peers (Beldarrain, 2007).

Peer learning uses a cooperative and collaborative learning approach (Poellhuber et al., 2008). In addition, students learn by interacting with their peers and restructure their prior learning by sharing information with one another. One of the main advantages of peer learning in ICTs is that it encourages students to take responsibility for their own learning by communicating with other students, and they are able to articulate understanding and have it critiqued by peers in addition to learning from a reciprocal role (Keppell et al., 2007).

Facilitation of digital course content by the facilitator is equally important as Beldarrain (2007) demonstrates that students may take the role of the facilitator by sharing their expertise, presenting sections of the course content, and using the file-sharing capabilities to share documents with the facilitator and peers. Moreover, the ability to conveniently add one's contribution to a collaborative project or connect with peers at any time facilitates access to education.

Resta and Laferrière (2007) indicate that collaborative learning provides elements that are essential for students, including that:

- learning is active
- the teacher is more a facilitator than a "sage on the stage"
- teaching and learning are shared experiences
- students participate in small-group activities
- students take responsibility for learning
- students reflect on their own assumptions and thought processes
- social and team skills are developed through the give-and-take of consensus building

Keppell et al. (2007) observe that there are two methods of peer learning namely informal and formal. Informal learning occurs implicitly where students discuss lectures, assignments, projects and exams in a casual social setting, as in the case where students randomly form groups after the sessions whereas, formal peer learning occurs when group work or group projects are explicitly scheduled into courses. It has been noted that most educators have implemented formal groups

in academia, for instance online classes, and structures to support collaborative learning. Nevertheless - there are conflicting views concerning the best way to implement peer learning in formal university courses and whether peer learning should be informally or formally assessed. Beldarrain (2007) observed that a synchronous communication tool inspires peers to rehearse presentations, provide instant feedback, clarify misunderstandings, and share knowledge. Moreover, a broader knowledge base means that distance learners will reap benefits of collaboration as they learn from each other and construct their own knowledge.

The research conducted by Keppell et al. (2007) found that the models which were used in a technology-enhanced environment promoted and supported learning. They found that the unique affordances of the technology supported their teaching and learning, and provided another means to obtain and provide feedback, complete group work, encourage collaboration and promote students to reflect on their learning. Furthermore, the project-based learning approaches, collaborative group work and the utilisation of online discussion forums provided important avenues for students to discuss, negotiate and obtain peer feedback about their work. Livingstone (2011) ascertained that there are case studies which capitalise successfully on the motivating, flexible and creative affordances of ICT, that are often combined with a willingness on the part of the facilitators to also engage in more flexible and creative ways with students. Her findings indicated that there are new learning opportunities centering on possibilities of student-oriented digital creativity and on collaborative communication with those who share similar interests and expertise.

In a research study carried out by Poellhuber et al. (2008), the objective of the study was to understand the impact of peer interaction and collaborative learning on student self-efficacy beliefs and persistence using a mixed methodological method. The results indicated that there was a link between peer interaction and persistence in using ICTs, and that all measures-of-persistence (assignment rates and course persistence) were found in the non-interaction condition (correspondence courses) more than in the peer interaction condition (online courses). The latter were attributed to the differences between groups rather than

to the absence of effect of peer collaboration. However, the online courses attracted more students with a less favourable academic background (a history of failure or repeated failures in the course, and a lower anticipated course grade. When these learners choose an online course, it may be a way of trying an alternative approach to the course. The researchers concluded that they used a qualitative approach to understand the effects of collaborative learning, which in fact became an enhanced tutoring and peer interaction condition. From a qualitative point of view, the student-tutor interactions stimulated student self-efficacy. Writing tutors were able to guide students through key areas of the writing portal, and students also assisted in cases where their peers encountered difficulties with activities. In the case of the web-based portal, students indicated that peer-support allowed them to use their mother-tongue to engage in peer interaction, which humanised the whole teaching and learning process.

Activities such as ‘How to use online dictionaries’ and ‘How to use a Thesaurus’ were embedded as part of the induction session, and prior to the commencement of the course. Still, this digital writing course design allowed for learning from the students and to go back and rework the materials for a subsequent intervention. Students were able to consolidate ideas, structures and tasks faster as they always had access to both Google and online videos which they could browse and view at any given time.

A student expressed that one can learn with and/or without digital resources. Yet, the digital resources did not hinder the learning of abstract and theorised concepts. However, when students were only learning abstract concepts from texts (without videos and podcasts) it remained difficult to link these concepts to practice. Thus, for learning abstract concepts together with their applicability, the present approach seemed favourable.

One of the focus points in observing students was their interaction and their norms in participating in group work sessions through the discussion forum. This was important, because it showed that effective learning can take place through social interactions. The researcher observed that students were eager to interact with each other during the sessions, to verbally exchange ideas and approaches in

writing. In the focus group session, students were very positive about the high degree of participation in their groups, indicating that it made them feel 'important as a student'.

All students worked through the exercises diligently. The open questions of the worksheets invited for interaction between students and open spaces on the worksheets encouraged students' receptivity towards finding answers (they indicated that they did not want to leave some spaces blank.

5.5.4 STUDENT PERCEPTIONS ON WORKING ONLINE WITH THEIR PEERS

Students were able to explore their creativity and enhance their social skills to foster a constructive learning community through peer collaboration and learner motivation. The aim of this programme was also to demonstrate that students need to be autonomous and take ownership of their own learning.

During the interview sessions students felt that the activities with the support of the facilitator and peers allowed them to interact with peers and the ability to collaborate, connect and share information with students and thus creating learning infrastructure that allows students to take their learning on themselves respondents (1, 6, 8, 9, 11, 12, 15, 16, 20, 22, 26 & 27). In addition, information was sent at a quicker pace to peers eliminating time and distance constraints, and thus created a space for students to share resources instantly**.** However, respondent 7 stated that he did not like interacting with other students; he would rather focus on the resources and activities to complete his assignment.

Students would exchange essays with their peers that enabled them to be critical in their writing, especially when attempting argumentative writing. It assisted them to familiarise themselves with their peers writing and how they can better their writing and reading styles (respondent 5). Group sessions were small and intimate as it was a break-away from larger groups where it was intimidating due to the volumes of students and most not getting a chance to pose questions (respondent 4). Respondent 12 agreed that there was a high degree of participation through group work. It was through engaging with one another, sharing ideas, information and

knowledge through connections with a group of individuals with whom they share similar interests and objectives with that created a learning community for students, a sense of belonging (Respondent 18). Students also found the discussion forum quite helpful.

5.5.5 STUDENT PERCEPTIONS OF ASSIGNMENTS

In the focus group session, students stated that they tackled their assignments with confusion and trepidation. Respondents 6, 9, 13, 14, 18, 22 and 23 stated in the past they used mind-maps and would discuss the modular content among peers. Respondents 1, 5, 7, 9 and 19 stated that they worked through their assignments in isolation. There were respondents (2, 11, 17, 20, 23, 26 &27) who stated that they would tackle their assignments way in advance and would read through the study materials plenty of times before attempting to do it. However, they felt still despondent and unsure about the quality of their assignments when they would had to submit. Most of the participants (3, 6, 7, 8, 9, 10, 11,12,15, 16, 21, 22, 24) indicated and acknowledged that a lot of their challenges when tackling their assignments was their understanding of the English modules and that English was not their first language. This made it difficult for them to comprehend what was asked as part of the assignment task.

5.6 MULTIMODAL RESOURCES

5.6.1 STUDENTS' GENERAL PERCEPTIONS ON USING MULTIMODAL RESOURCES

Online texts: Respondents (2, 6, 7, 11, 12, 15, 16, 20, 24 & 26) revealed that the online texts assisted them through visual presentations, texts, reminders of information, and learning content. Moreover, the online texts assisted students to be motivated and informed, especially through discussion forums. As respondent 26 stated that the online texts give her the necessary skills and information to use her skills to improve her studies.

Videos clips: The respondents (1, 3, 4, 8, 9, 10, 14, 17, 18, 19, 21, 23 & 25) indicated that the visual resources supported their learning, especially the video clips. Video clips assisted them to construct their thoughts into effective writing, and it helped them to select useful information to construct their essay. The purpose of these video clips was for students to play these videos until these students had a better understanding of how to enhance their reading and writing skills. In addition, English is a module that needs constant practice as oppose to the subjects that one can memorise and regurgitate. Video clips assisted students to practice their writing, reading and writing skills in my own pace and time.

As respondent 17 indicated “I only watched the videos on essay writing. It made things clearer for me, especially because they were using colours. I was able to rewind and fast-forward and re-watch it again. That helped me”

Sound clips: The respondents (1, 2, 5, 9, 11, 12 & 13) found that sound clips made it more tangible for them to relate as one is allowed to pause, stop, and rewind these clips as many times as one feels it necessary. Students were able to use their ear- or headphones to remind them what to do and not do in writing. It also assisted them with their planning and assisted them with memorisation. As respondent 13 stated that “I was able to work through the sound clips to enhance my reading and writing skills”.

5.6.2 STUDENT PERCEPTIONS ON WHETHER MULTIMODAL RESOURCES SUPPORTED THEIR LEARNING

During the interview sessions all respondents indicated the digital writing portal assisted them on how to use technology when approaching their writing. The more students practiced their reading and writing, the more confidence students’ gain in the understanding of not only for EAP, but also other modules. In reading, it has guided students on how to select important information that has them to construct meaningful sentences as part of the writing process. Academic reading and writing are important academic activities, both at university and in the professional workplace. Moreover, the following key points were revealed by the respondents:

- links to useful websites, relating to reading and writing exercises were provided to students
- the facilitator guided students through writing activities, which they can employ when constructing their assignments.
- The programme assisted with research and information literacy skills and how to integrate these with academic writing.
- The resources and the facilitator encouraged students to actively engage with the materials, either in workshops or own their own.
- developing their thinking skills, and improve confidence in their reading and writing abilities,
- Provided confidence in their reading abilities to assimilate information for overall understanding
- It guided students' literacy and academic skills needed to successfully interact with materials and complete academic studies.

All these students indicated that this programme has aided their writing, reading and analytical thinking skills. This digital web-based portal provided insight to the knowledge in the field of academic writing.

5.7 WRITING SKILLS

5.7.1 NUANCED WRITING SKILLS AT UNDERGRADUATE LEVEL

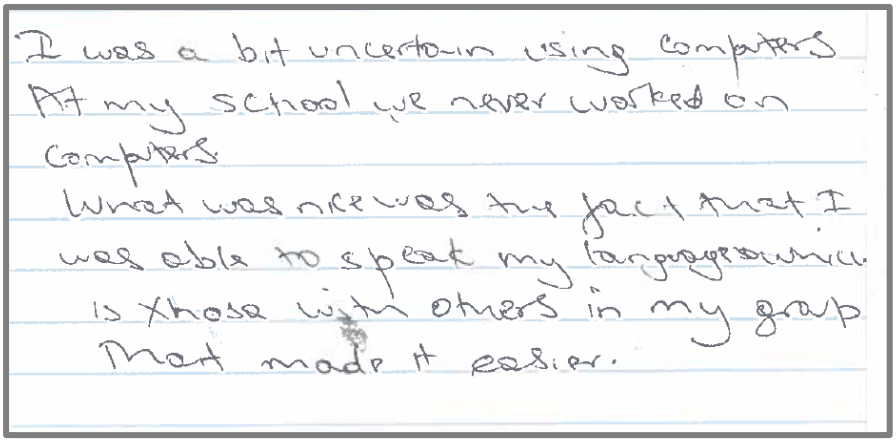


Figure 17: Naïve sketch of student's engagement with computers for language development.

In her focus on student writing, Lillis (2011) indicated that what “actual writers do in texts constitutes a methodological/epistemological shift” (p. 27). In practice, this shift should be used to enhance connection and involvement in the learning process. The majority of learners interviewed indicated that they have never worked on computers in the secondary school years that English were often presented to them in their mother-tongue and that engaging with classmates maximised their learning.

Amid the complexities of writing skills and the academic discourse barriers which often arise, various advantages are traced to the use of interactive media in the digital language classroom. One advantage is that it offers a powerful self-access facility and can complement teaching and learning materials equipping pupils for the “demands of industry and with social awareness of communication systems” (Halstead, 2012, p. 06). In addition, activities can also provide simulation and the mastery of concepts if correctly employed.

In addition, educational technologies can keep record (if it is computer-based) and monitor students’ progress in their writing, indicating stages in which the facilitator can intervene and respond to the individual needs, as well as assisting the student with the rate of their learning.

For students with specific needs this digital platform also provided simulation and also encouraged pupils to create and take ownership of their own learning and fostered collaboration as peers to increase participation through videos, podcasts and presentation slides. ICTs can address learning activities where a wide range of approaches; and to which these are used to fit learners’ interest, learning styles and skill levels. This can ultimately maximise input “exposure and output production” (Strambi & Bouvet, 2003, p. 96). In addition, the development of relevant materials can address the challenges and changes in English which may enhance the communicative competence of learners, discourse, roles and relationships between the individuals and the facilitator.

5.7.2 CHALLENGES PERTAINING TO THE INTEGRATION OF TECHNOLOGIES TO WRITING

With writing being one of the most fundamental language skills that is needed for students at university, Aljumuah (2012) observes that the value of writing is also a critical skill for academic and employment purposes. In essence, writing can be viewed as quite an effective tool for the development of academic language proficiency, as students more readily explore advance lexical or syntactic expression in their written work at university level.

In addition, writing for academic purposes can be viewed as invaluable in mastering diverse subject matter, especially as it will afford students critical skills to understand and apply written expression of course requirements which raises their awareness of knowledge gaps and abstract problem-specific knowledge into representations, allowing (in this case study) writing tutors to better understand the students' level of knowledge and thinking process and to see in what areas writing instruction would be most effective (cf. Warschauer, 2010). According to Hewett and Ehmann (2005), online writing instruction is viewed similar to traditional writing instruction in one key way, namely that instructors have to provide written feedback to their students through the use of meta-commentary. In face-to-face settings, students are also accustomed to receiving essay instruction through their instructors' written remarks or feedback comments.

During the marketing phase of this programme, various considerations were taken into account including that access to the digital web-based portal can provide learning opportunities to students residing in remote areas. This ensures that this web-based course will provide "sufficient enrolment to justify its development" (Savenye, Olina & Niemczyk, 2001, p. 373). The importance of having a digital facilitator as part of a web-based writing portal is an endeavour compromising multiple aspects of efforts and course technology that needs to support all students to make courses successful (Sun, 2016))

Savenye et al. (2001) asserts that students need preparation and support in making the transition to a more active learning environment that is technology-

based. Aljumuah (2012) observes that computers have been used in writing classrooms for a long time. It makes it much easier for facilitators to make corrections and for students to make the necessary revisions. This can be done through editing programmes that provide additional functionality such as spell-checking, and readability scores that help students with textual errors. A multimodal approach examines writing as part of a multimodal representational and communication landscape, and looks at the way writing is embedded within a wider semiotic frame in a social context (Archer, 2017). Hewett and Ehmann (2004) found that that online writing instruction can help students with writing correctness, idea generation, organisation and arrangement, audience clarification, purpose or focus and argument. Furthermore, theoretical constructs enable the reader to understand what is at work in the practices suggested without using jargon.

5.8 THE COURSE OVERALL

5.8.1 PERCEPTIONS OF THE COURSE

The academic writing programmes benefitted students as academic writers, which was a crucial factor to understand how writing works within an academic community. Face-to-face workshops were planned to overlap with assignment due dates, concentrating on the key skills required to successfully complete assignment tasks. Each writing workshop included a component of digital literacy, with a specific focus on assignment formatting requirements and generally acceptable methods of formatting documents for academic writing within a tertiary institution. Furthermore, examination preparation sessions were scheduled to allow students to test existing skills and supplement outmoded skills with current study methods. Students were encouraged to engage with examination papers and written texts during group work exercises and through group discussions.

5.8.2 SKILLS ENHANCED THROUGH THE COURSE

The digital writing portal assisted students to enhance their academic skills and knowledge such as academic writing, critical reading, as well as task and question analysis, vocabulary development, summarising and paraphrasing skills. Through writing interventions students showed general improvement in writing structure, vocabulary structure and question analysis.

The facilitator motivated students to participate in reading activities such as skimming, scanning and speed reading which were useful for selecting constructive information that benefitted the writing component of the course. This programme also emphasised the importance of referencing techniques and using referencing with Microsoft Word, Students were invited to attend one preparation workshop for essay writing skills and were given two weeks to complete their draft assignment essay for proofreading and consultations. Follow-up workshops and one-on-one and group consultations were scheduled to assist students with further reading, writing and research skills for English.

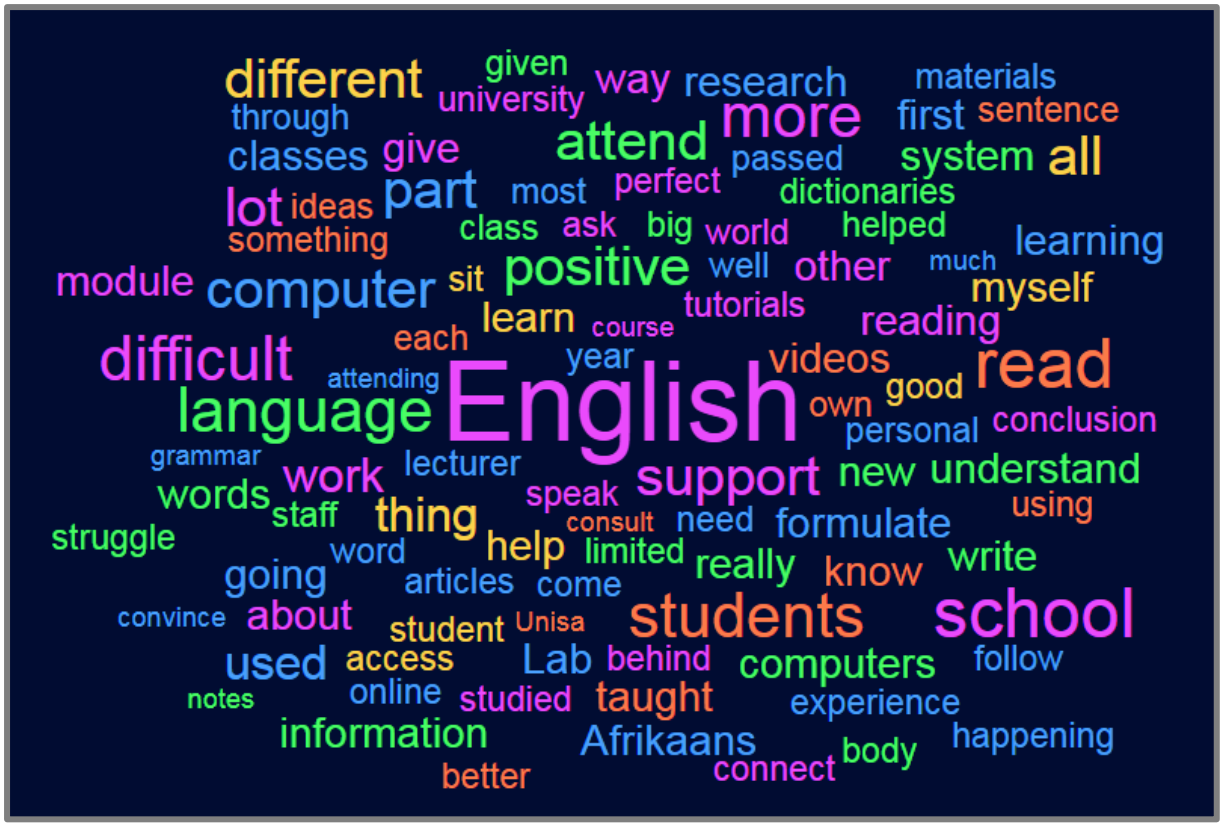


Figure 18: Wordle of students' feedback on the online digital portal.

The results of this study showed that, particularly additional language learners enjoyed the engagement with the writing facilitator and materials throughout the academic semester. As indicated, during focus group discussions, their experiences showed that the portal and writing tutor engagement were supportive and well-structured. In this study, motivation and regular attendance were not seen as sole indicators to academic success. Learners had to be disciplined, organised and pro-active in the learning process and be willing to work through activities prior to attempting the next part of the activities online.

In order to maintain student interest and motivation throughout the entire course, exposure to Writers' Circles and flexibility into the materials to accommodate learner uniqueness were always considered, scheduled and integrated. The latter point links to the flexibility and interaction mixed-mode method of Strambi and Bouvet (2003) in which they advocate that sufficient flexibility needs to be built into materials to cater for a variety of learner styles, interests and skill levels.

5.8.3 CHALLENGES

Various challenges were also identified by the facilitators and respondents during their first few engagements namely that:

- activities were viewed as too digital and that did not provide face-to-face opportunities for essay-writing practice as well as an opportunity for interaction between students. This was indeed an area of concern as training opportunities were based on set principles and did not take into consideration the extent to which practice-based needs of students need to be balanced to make engagement as academically friendly as possible for first-year students.
- the nature of learning was new to additional language students and altered the means of instruction to which they were traditionally used to. It was important to encourage learning, and to create platforms for immersion into any set digital or web-based learning programme. In order to find a way to address the latter, other programmes were accessed, especially those used

in language learning classrooms. In several programmes, behaviourism was still used as a method of instruction. This, as indicated by Cuban (1986, as cited in Halstead, 2012) can lead to a pessimistic analysis of the impact of technology in teaching and learning. It was important that technology should be embraced as an intangible asset and as "as a tool to create knowledge" (Halstead, 2012, p. 10).

- As this was the first decentralised CALL initiative at an ODeL institution, making use of multimodal resources was a totally new initiative. Students had to be given basic computer literacy skills and as writing was central to this programme, learners also had to know how to critically engage with newspaper articles, academic journal articles and language dictionaries. For non-mother-tongue speakers of English, dual-language dictionaries proved to be quite useful during online-based activities.
- In the context of ODeL, cassettes and CDs have now yielded to podcast and videocasts. With podcasts and videocasts recorded in the United States and the United Kingdom, contextual issues soon became problematic as it did not address local concerns. Hence, the researcher and facilitator had to guide students in a principled way to address differences but also commonalities in terms of what is local and universal.
- As computers are initially associated with the use of rote learning, exercises used may often give a mechanical feel to learning, and in a research study conducted by Halstead (2012), Halstead found that in programs testing spelling mistakes, punctuation and grammar, the computer was merely operating as a machine (affording no clear reason to why the responses were wrong), and showcased itself as a behaviourist tool (Halstead, 2012). This study conducted by Halstead, also found that the emphasis on reading should be on skills, and "synthetic phonics of graphemes and phones, focusing more on direction rather than support" (p. 14). Such materials often show strong influences to British and American texts, especially with choice of materials, context, pronunciation, diction and spelling and were seldom applicable to African audiences. This was a clear reality, and certain OERs

had to be disregarded as they brought along confusion as opposed to clarity on global issues.

- In addition, various students did not have computer facilities at home, and in some cases those who did have also indicated slow internet connectivity. In essence, this language learning project had various limitations. Thus, it was important for the facilitator to be aware what tools are available for, and to the learner, and how these can be linked to English teaching and learning.

5.9 LIMITATIONS TO THE STUDY

This study is concerned with the framework of Multimodality and Connectivism through the lens of educational design-based research. With the crux being that "hypermedia applications, online virtual worlds, face-to-face interactions and multimodal texts" (Kay, O'Halloran et al., 2013, p. 666) can "exhibit different learning strategies" (Echevarria, Vogt & Short, 2008 as cited in Ajayi, 2009, p.585) in support of first-year students' academic English performance. The researcher believes that there are several limitations to this study:

- Although this study investigated how an inclusive, interactive writing intervention support portal to first-year distance education students can enhance the academic writing abilities of the students; the foci included excluded the perceptions of academics. Additional studies should include and integrate academic perspectives in the near future.
- The use of only a qualitative method also constitutes a limitation. There is a need to use triangulation to gain an in-depth understanding of various intervening factors such as perceptions, motivation, student-retention, student success at a differing level including perceptions of student retention practitioners and lecturers.
- The design of the online web-portal using Sakai also had its limitations in terms of material uploads and plug-ins. For further research, the researcher strongly recommends that a site like Drupal, which is a cross-platform open source platform be considered.

- Although educational design-based research is an iterative design methodology based on a cyclic process, this cycle was only tested once with focus groups integrated as part of the evaluation process.

5.10 CONCLUSION

In the context of this study, it is clear that contextually relevant resources at university level are not appropriately curated and integrated to guide students sufficiently on how to become autonomous. The analysis of research findings raises two main issues, namely:

- The role of educational technologies to guide first-year students through critical skills, in this case, academic writing in open and distance learning.
- The suitability of educational technologies to impart competencies through distance education for learners to acquire the skills through structured intervention.

With regard to the first issue, no higher education Writing Centre in South Africa currently offers a web-based academic writing programme, authentically developed, to address the academic needs of first-year university entrants. In essence, as Archer (2017) advocates “multimodal pedagogies involve the *recognition* of students’ brought-along resources, including those resources that are not necessarily valued in higher education such as multilingual, experiential and embodied resources [own emphasis]” (p. 2).

Based on the results of the focus-group interviews and the naïve sketches, the researcher concludes that students were eager where skills-transfer were integrated into digital content activities, especially in cases where skills correlated with assignment questions. It is even acceptable to say students find lesson-time more useful where support is being provided in an active learning environment and skills are integrated for them to understand ways of meaning-making in formative and summative assessment. The researcher conclusion is justified by the findings of similar studies conducted in South Africa, the United Kingdom, the United States

of America and Asia-Pacific (cf. Savenye et al., 2001; Sun, 2016; Archer, 2017; Aljumuah, 2012).

In the focus group discussions, students indicated that they felt much more motivated in completing online exercises. This corroborated the points made by Aljumuah (2012) who found that online writing activities develop students' reading and writing skills, increase their motivation toward academic-sanction tasks, improve their background knowledge, and assist students to learn autonomously to complete tasks, build a community of learners and served as powerful feedback tools. With most online environments rich with written texts, multimodality can accommodate learner individuality and the unique learner profiles.

As online learning environments are rich with written text, it often includes feedback only in written mode. Through the use of audio clips, feedback on queries answered questions, comments and suggestions in instances where the learner was unable to understand a particular point or concept. In addition, the use of asynchronous media allowed for learners to access reviewed assignments online. The online discussion portal allowed learners to read, write and converse more often. Continuous practice of essays allowed students to integrate and learn from feedback and to think prior to composing their writing whilst improving their knowledge of English. In addition, opportunities to write more, allowed students suitable platforms to express their thoughts and ideas in sentence and paragraph structures as explained on the web-based portal. Through the reading of online blogs, the perusal of video and audio resources, students were able to be exposed to language in authentic situations and to deliver their opinions and thoughts online. This also allowed students to evaluate the quality and suitability of materials and information.

5.11 RECOMMENDATIONS

In light of the discussions of research findings, and the subsequent limitations and conclusions to the use of multimodal resources in writing development pointed out in this study, the following recommendations need to be considered:

5.11.1 BLENDED PROGRAMME COMBINING DIGITAL MEDIA WITH TRADITIONAL CLASSROOM METHODS.

It is important that any form of learning should be principled and combine digital media to accommodate learners' individuality and be inclusive of all aspects of learning. Web-based learning should have a face-to-face element attached to it, whether in-person or through Skype or similar platforms.

5.11.2 THE NEEDS OF STUDENTS THROUGH CALL IS DIFFERENT

As discussed previously, the academic needs for additional language speakers of a particular language differs from the efforts that had been put into syllabi of first language or second language speakers. Thus, materials need to take into consideration the context and content of materials to be student-responsive and academically apt.

5.11.3 THE NEED FOR DIGITAL LITERACIES SHOULD NOT BE UNDERESTIMATED

Language learning is just one aspect of Computer-Assisted Language Learning. Digital literacy; or digital fluency, should also be considered. As students are part of an academic environment, students need to master more functionalities than the mere acquisition of knowledge through the basic elements of digital devices. Students should know how to type, conduct research, search for academic journal articles, access dictionaries and use thesauruses as part of their academic development.

5.11.4 MULTIMEDIA SHOULD ADDRESS CONTEXTUAL NEEDS

Multimodal resources should address the contextual needs of a student. This way students will be able to associate with both content and context, and keep abreast of conventions within their immediate academic ambit.

5.11.5 A PERSONAL COMPUTER WITH RESOURCES DOES NOT IN ITSELF CONSTITUTE EFFECTIVE LEARNING

Resources should be eclectic and principled in order to constitute learning. Learning should be defined as the acquisition of knowledge or skills through study, experience, or being taught. In addition, learning is active (Piaget, 1964; Vygotsky, 1962), builds on prior knowledge (Alexander, 1996) is situated in an authentic context (Greeno, 2006; Kolodner, 2006) and requires learner motivation and cognitive engagement.

5.12 SUMMARY

The aim of this programme was to facilitate interaction in teaching and learning within a blended environment where students were able to make use of online resources during workshops and discussion sessions. Furthermore, the programme offered students who need or wanted to improve their academic skills, a space to acquire research skills as well as improve their digital literacy skills. This programme can assist students with basic content and the technical skills required to conceptualise, plan and draft written assignments. Students were also encouraged to work together and to transfer the skills learned in the writing lab to other courses. From an educational point of view, reading and writing are important academic skills in both the academic and professional spheres. These programmes present an opportunity to enhance and enrich students' reading and writing capacity by capitalising on those activities in which they were engaging. The programmes provide a learning environment in which learners can select reading

materials and interact with other students through reading and writing, to arrive at social learning.

Students indicated their general learning experience was very enriching, informative and engaging. They felt happy with the level of engagement and services provided, as well as the quality of the workshops and their content. They also gained a better understanding of the module and the requirements for completing the assignments and working toward the examinations.

The skills that were most improved were those relating to the structuring of paragraphs, formalising ideas apt to academic conventions, digital literacy and writing and referencing skills. Participants believe that this web-based digital writing portal is a process which enhances the teaching and learning process by empowering learners, especially in an ODeL context and equipping students with the necessary skills for the future.

This programme offered new opportunities for students to be part of an electronic learning community, and through this programme discussions, collaboration, peer feedback and group projects were adopted as part of new innovative teaching and learning strategies. Moreover, peer learning also promotes lifelong learning and is linked to generic capabilities of teamwork and interpersonal skills that can be employed in a professional manner.

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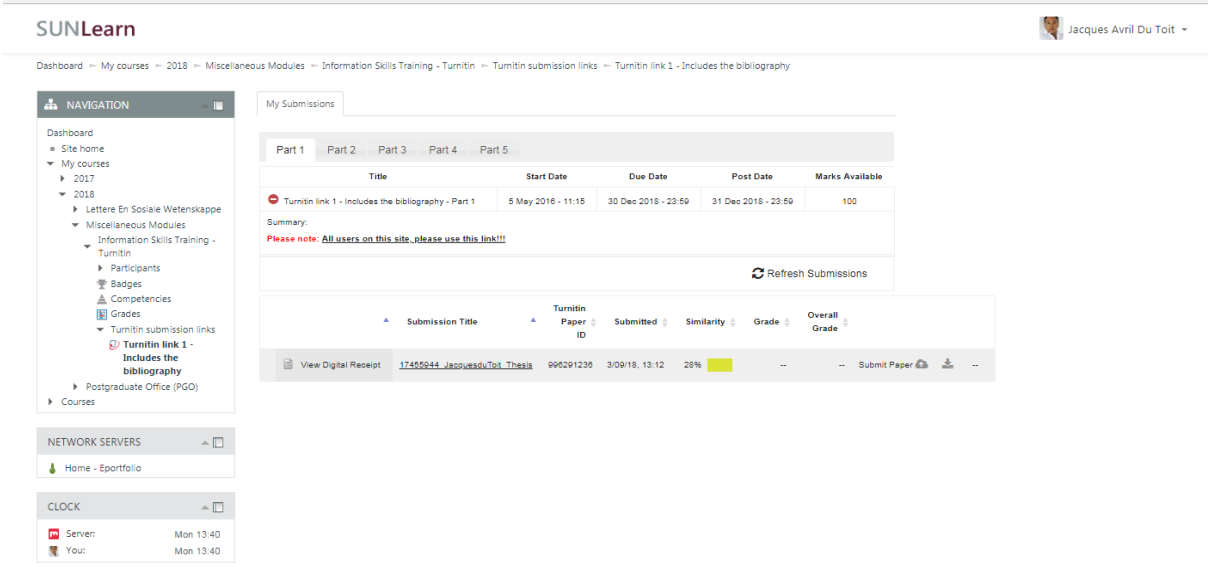
APPENDICES

APPENDIX A: Turn-it-in reports



APPENDIX B: A brochure advertising the digital writing course

UNISA

Academic Literacy in a Digital Age

eConsultations - Writing Courses
Reading Courses - Digital Courses

For more information visit:
www.unisa.ac.za/acalit

Services

Since 2005, the Academic Literacies Centre has been operating as a section within the Department of Tuition and Facilitation of Learning. In 2015, ten years after the initiation of the support service, two practice-based courses were developed, to support both undergraduate and postgraduate students with their academic reading, writing, quantitative and digital literacies needs.

The services provided at the Academic Literacies Centre are mainly structured through:

- ***electronic and telephonic consultations***, where needs diagnostic measures are employed, in-depth cognitive and affective developmental support provided, and focus towards student ownership in the learning process are explored
- the ***facilitation of video conferencing workshops***, both in language, numeracy and science, complementing the consultancy services, and
- ***independent practice-based learning programmes*** to facilitate academic reading, writing and critical thinking practices, whilst introducing students to a combination of divergent and convergent thinking practices for their discipline.

Given the nature of such a service, especially for the distance learner, please note

- not to send long excerpts of your work. The e-Facilitator can only respond to short papers (maximum 15 pages).
- requests for editing or proofreading will not be considered.
- Allow at least one week for a response.

Contact Us

Contact your Academic Literacies Digital Coordinator at:
aLitDig@unisa.ac.za

Digital Academic Literacies Courses

Undergraduate Academic Literacies in a Digital Age

Purpose
The purpose of this practice-based online course is to introduce undergraduate students to academic reading, writing and numeracy at university level.
The main areas that students focus on during this course are:

- Academic Reading
- Academic Writing
- Numeracy Skills Development
- Information Literacy and Research Skills
- Digital Skills Development
- Study Skills

The aim is to develop the academic literacies skills of individual students and to equip them for further studies.

Postgraduate Academic Literacies Writers Course

Purpose
The purpose of this practice-based online course is to introduce postgraduate students to the complexities of postgraduate research, reading, writing and numeracy at university level. The main areas that students focus on during this course are:

- Advanced Academic Reading
- Advanced Academic Writing
- Managing relationships and support
- Managing self-confidence
- Information Literacy and Research Skills
- Writing Literature Reviews
- Developing Research Proposals
- Ethics in Research
- Developing and formulating research projects

The online course lays the foundation for the students to become more critical readers, writers and thinkers in an information-driven world, especially in relation to discipline specific focus areas.

Define tomorrow. UNISA university of south africa Define tomorrow. UNISA university of south africa Define tomorrow. UNISA university of south africa

APPENDIX C: Ethical Clearance forms

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot · your knowledge partner

Approved with Stipulations
New Application

29-Mar-2016
Du Toit, Jacques JA

Proposal #: SU-HSD-002253

Title: **TRAJECTORIES OF LEARNING: THE USE OF MULTIMODAL RESOURCES TO ENHANCE ACADEMIC WRITING DEVELOPMENT IN OPEN AND DISTANCE LEARNING.**

Dear Mr Jacques Du Toit,

Your **New Application** received on **11-Mar-2016**, was reviewed by members of the **Research Ethics Committee: Human Research (Humanities)** via Expedited review procedures on **16-Mar-2016**.

Please note the following information about your approved research proposal:

Proposal Approval Period: **16-Mar-2016 -15-Mar-2017**

The following stipulations are relevant to the approval of your project and must be adhered to:
This project will be done at Stellenbosch University, for a SU degree and involving SU students. Hence it is unclear why a UNISA approval letter has been uploaded? Please clarify whether data will be collected from UNISA students as well. Institutional permission from the SU Division for Institutional Research and Planning is required. A copy of this letter must be sent to the REC as soon as obtained.

Please provide a letter of response to all the points raised IN ADDITION to HIGHLIGHTING or using the TRACK CHANGES function to indicate ALL the corrections/amendments of ALL DOCUMENTS clearly in order to allow rapid scrutiny and appraisal.

Please take note of the general Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

Please remember to use your **proposal number** (**SU-HSD-002253**) on any documents or correspondence with the REC concerning your research proposal.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Also note that a progress report should be submitted to the Committee before the approval period has expired if a continuation is required. The Committee will then consider the continuation of the project for a further year (if necessary).

APPENDIX D: Focus Interview Guide

Focus Group guide

Researcher: Jacques du Toit

Title: Trajectories of Learning: The use of multimodal resources to enhance academic writing development in Open and Distance Learning.

1. At Unisa, what is your opinion in using technology as part of your studies?

2. How were you introduced to the technology-based essay writing support programme on campus?

3. What was your first reaction when you heard that you will be using electronic (or multimodal) resources as part of the technology-based essay writing support programme?
4. What was the most enjoyable in using the programme as part of your module?
    a. What parts did you not enjoy or like, and why?

5. How did the activities of the programme allow you to interact with your peers?
    a. How did you feel interacting with your peers?

6. How did you tackle your writing assignments before doing this programme?

7. How did the use of resources on the electronic portal (such as online texts, videos and sound clips) supported your learning?
    a. If you feel it has not supported learning, why?

8. How did the (technology-based) writing support programme provide you with a better understanding of your course?
    b. How did this programme assist you in your improving your general essay writing skills?

9. How can programmes such as this assist other students to improve their writing?

10. Tell me about your overall experience as a student and what skills improved most after being technology-based writing support programme overall.

APPENDIX E: Confidentiality Agreement with Coder

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot • your knowledge partner

APPENDIX C

CONFIDENTIALITY CLAUSE

BETWEEN

JACQUES AVRIV DU TOIT

AND

COLLEEN GAIL MOODLEY

Research Title: Trajectories of Learning: The use of multimodal resources to enhance academic writing development in ODL.

The research code of ethics mandates that confidentiality should be maintained throughout data collection, data analysis and report writing.

As a transcriber/coder I understand that I have access to confidential information. By signing this statement, I am indicating my understanding of this responsibility and agree to the following:

- I understand that all information obtained or accessed by me in the course of my work is confidential. I agree not to divulge or otherwise make known to unauthorised persons any of this information, unless specifically authorised to do so.
- I understand that the names and any other identifying information about study sites and participants are completely confidential.
- I agree to use the data solely for the purpose stipulated by the client.
- I agree to maintain the confidentiality of the data at all times and keep the data in a secure, password protected location.
- I agree to shred all hard copies of data in my possession on completion of the project. All electronic copies will be permanently deleted from the hard drive of my computer upon completion of this job.

COLLEEN GAIL MOODLEY — Printed name, Transcriber/Coder

15/11/2016 — Date

Signature

APPENDIX F: Thematic Analysis

Themes	Codes
Digital Literacy Skills and Support	• Students were happy to receive training on how to navigate the online website and access digital resources. • experiences of students were largely positive in terms of online engagement and support. • guided assistance provided a huge support. • collaborative learning environments made support easier • digital literacy skills made support to learners easier. • digital portals made support easier to learners and provided an innovative way to promote and sustain new knowledge in learners. • Initially learners were fearful towards teaching and learning. technologies as it is an alternative way to the traditional Writing Centre support structures. • Digital tuition showed enhanced computer-based learning and connection with peers. • Students were optimistic in learning new skills. • Nervousness and uneasiness were initial emotions, but confidence grew as learners progressed.
Technology as part of the EAP module	• Lack of access to computer and Wi-Fi facilities at most homes hindered practice-based activities. • Although lessons were convenient, access to technology remained a problem and students were only to access computers in the Writing Centre Commons. • Downloading of resources and study notes remained a problem due to lack of data. • Human connection was viewed as imperative to guide students. • Social media usage started to increase as synchronous online spaces for discussion. • ICTs have become a supplementary method to enhance group work and facilitate group discussions. • Peer support through social media platforms and student-relationships became more active. • Social and group-dynamics were developed through “give and take” consensus building. • Students found the use of online dictionaries and the thesaurus helpful. • Students were receptive in finding answers online.
Student views on working online with peers	• Social skills were enhanced through peer collaboration which increased learner motivation. • Connection with peers affirmed student identity. • Responses from peers were fast eliminating distance and time. • Some students preferred independence as opposed to conversing and engaging with peers. • Students welcomed the digital spaces to share ideas, information and knowledge. • The embedded discussion forum on the Sakai site was quite helpful.
Using multimodal resources	• Videoclips and visual representation made learning content more accessible. • Videoclips assisted students with visual cues to grasp information. • Sound clips were easy to download. • Sound clips were easy to pause, rewind and stop. • Aided learning enhanced and fostered analytical skills. • Students needed preparation and support in making the transition to new active learning environment.

	• Resources were easy to navigate and representational and communicative considering the social landscape.
Overall experience	• Engagement was largely positive. • Students valued the face-to-face and e-support provided. • The digital writing portal provided spaces to engage, collaborate and connect. • The resources developed were relevant to the EAP course and provided skills-based activities. • Materials were convenient to understand and to discuss with other students. • Videos were an enjoyable part. • E-support was much valued. • Language barriers were still a problem when reading online texts for comprehension. • Major socio-linguistic adjustments were voiced to read off screen and to make notes from the screen. • Some found switching to electronic media very intimidating.